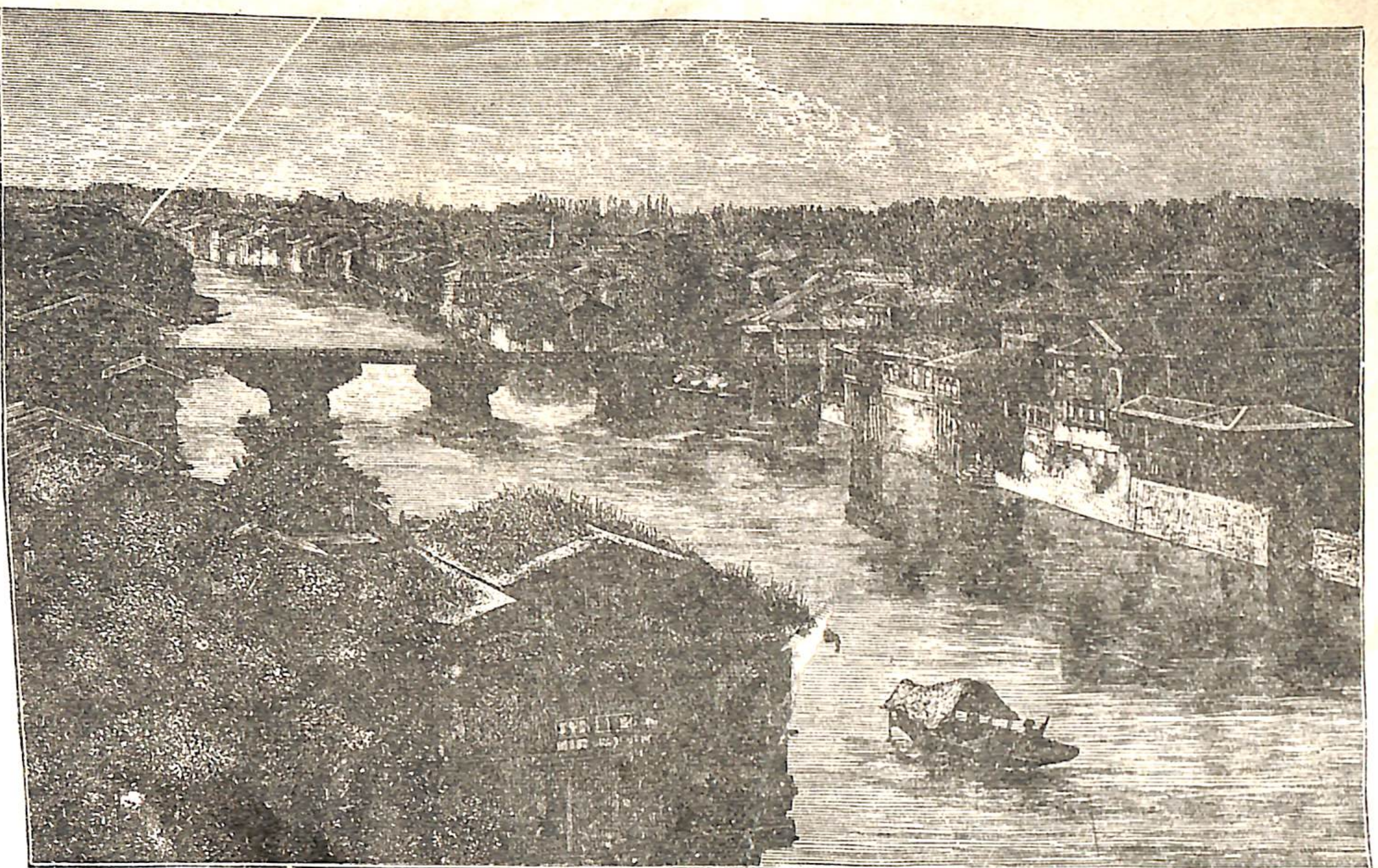
THE JUMMOO AND KASHMIR TERRITORIES.

BY

FREDERIC DREW

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THE
JAMMO & KASHMIR
TERRITORIES



CITY OF SIRINAGAR.

by Frith.

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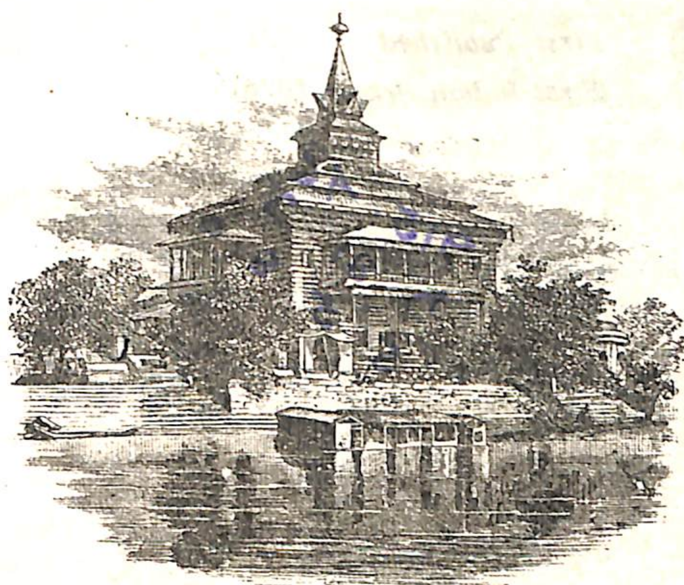
JUMMOO AND KASHMIR TERRITORIES.

A GEOGRAPHICAL ACCOUNT.

BY

FREDERIC DREW, F.R.G.S. F.G.S.

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PREFACE

NEARLY all that it was necessary for me to say by way of introduction, I have written in the first chapter. Only here, on the threshold, should be pointed out the system on which the Indian names and other words have been spelt. I have followed that which has variously been called—after those who have either elaborated or applied it—the Jonesian, Forbesian, or Hunterian system, but which now, from the increasing use of it and from its adoption by some of the departments of the Government of India, fairly merits to be called the Indian system of applying the Roman alphabet. In this the ten vowel sounds which occur in the languages of northern India are represented by the five vowels of our alphabet, by an accentuation (to denote elongation) of three of them, and by two diphthongs. The following table will make clear to anyone who speaks English the exact native Indian pronunciation of these vowels. In the middle column is an English word whose vowel-sound corresponds with that of the character to the left of it, while the third column shows the same word as it would be spelt on the Indian system, to retain its original sound.

Indian vowel.	English word to exemplify the pronunciation	Indian spelling of the English word, the sound remaining the same.
a	bun	ban
ā	palm	pām
i	bin	bin
ī	been	bīn
u	pull	pul
ū	pool	pūl
e	day	de
o	bowl	bol
ai	fine	fain
au	fowl	faul

For the elongation of the vowels *a*, *i* and *u* I have used the long mark ; others who follow this system use the acute

accent ˏ and others the circumflex accent ^; in any case the same effect on the sound is intended.

The power given to the consonants varies little from that which they have in English; only one or two remarks are necessary. There are two kinds of *t*, of *d*, and of *r*, one dental, made by the tongue against the teeth, one cerebral, made by the tongue against the back part of the palate; these I have not distinguished except in Appendices I., II., III., the special object of which required the distinction.* In these places the cerebral *t*, *d*, and **r** are marked by the letters being put in a type different from that of the rest of the word. Also the nasal *n* (as in the French *on*) is distinguished by a dot above it thus *ṅ*. The letter *c* is not used except in the combination *ch*, which has the power of *ch* in *church*. *Sh* is pronounced as in English. *G* is always hard as in *go*. *J* is to be pronounced as it is in the English word *jam*. *Q* stands for a more deeply guttural *k*. An apostrophe ' stands for the Arabic letter 'ain; in pronouncing Indian words it may be neglected with little harm, since the natives of India make little or no difference for it.

I have endeavoured to carry out this system consistently except in a very few cases. Of these exceptions an instance is to be found in the title of the book, where the name 'Jummoo' must be pronounced in *English fashion*, and I have adhered to the same spelling of that place all through the text and in the maps. My reason for making this exception was that the name would necessarily be read before this preface, and yet without a previous explanation there was no likelihood of the reader getting anywhere near the right pronunciation if it had been spelt on the Indian system. Had I systematically transliterated the name as it is found in the two characters Devanāgarī and Persian, it would be respectively Jaṅbū and Jamūṅ, with the nasal *n*. Either of these forms would have been such a stumbling block at the beginning that I thought it best in this case to be inconsistent. Again, 'Kashmir' I have all through spelt without the long mark which, by the rule, it should have over the *i*. This spelling has

* In the Index also, the native words have these letters so distinguished.

become common in England, and since it is so little different from the systematic form, it seemed unnecessary to disturb it; and this applies to a few other words, such as 'Raja,' which should have a long mark over the first *a*. It may also be mentioned that 'Himalaya' (which I have everywhere spelt thus) should, to denote its right pronunciation, also have a long mark over the first *a*.

One difficulty I have had with reference to some of the names on the maps. The names of those places (not indeed many) with the pronunciation of which I am not familiar, have been taken from various maps, chiefly from those of the Great Trigonometrical Survey. Now this Survey in constructing the Kashmir series spelt the names according to no system at all; the same vowel will, sometimes in the same name even, have two different powers. While trying, then, to reduce these to the Indian system, I have in some cases been uncertain what sound was intended by the word as I found it on the maps; hence some errors may have crept in.

I wish here to call attention to Appendix VII., which contains tables of the Census and the Trade of the Territories. The Census was taken after I left Kashmir, and the information reached me too late for incorporation in the text. My estimate of the population of Jummoo given in p. 63, must be corrected by reference to the Table.

In conclusion, I wish to offer my acknowledgments to Mr. Frith for the permission to reproduce some of his beautiful photographs.

F. D.

28, JERMYN STREET, LONDON,
June, 1875.

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JUMMOO AND KASHMIR TERRITORIES.

CHAPTER I.

INTRODUCTION.

THE aim I had before me in writing this book was the representation of those geographical facts concerning a country I for many years lived in, which had made such an impression on my mind, or which had been so noted down by me, that there was hope of my passing them on to others in such a way as to make on their minds a clear and distinct image.

The account is limited almost entirely to the description of what I have not only seen, but well remembered. By this I hold myself exempted from giving other reasons why certain places or certain subjects have been dealt with less fully than their importance might seem to require. For though in the course of ten years I visited almost every portion of the tract of country named in the title-page, and in some parts resided long, yet other parts I may have seen but a few times, and others still have passed through but once. And there was equal variety in the extent to which I noted down what I saw, this being sometimes least where I stayed longest. Now since, without having made definite notes on the spot, I have seldom ventured on description, this circumstance in itself will account for much inequality in the treatment of the parts of my subject. But, for all this, I have hopes that there will be found a connection between the portions of the book sufficient to constitute a thread by which the reader

may find his way through what is the really complicated geography of a tract which is large in extent and varied in character.

There is no large part of this country that is altogether unknown to the Western world. There is hardly any place we shall reach that has not been visited, and few places that have not been measured, by Englishmen who have preceded me. Many of the previous travellers, too, have given to the public the results of their observations. If I were writing a compilation from their books and memoirs, or if I were attempting to consolidate their information with my own, this would be the place to enumerate their various works. But as I propose rather to give a simple version of what I myself observed, whether it be the same as, or whether it be different from, what has before been told, I shall only refer to other writers where I have been distinctly indebted to them, or where it may be necessary to comment on their facts or their conclusions.

I have confined myself in this account to the territories of the Maharaja of Kashmir, for the reason that my travels in the Himalayas were almost entirely restricted to them. This ruler has for his full title "Maharaja of Jummoo and Kashmir." By the Panjābīs he is most commonly called after the former place, by Englishmen after the latter. It is this last practice which has led Englishmen at home to confound "Kashmir" with the whole of the territories. This mistake (which has unfortunately found its way into the maps of India) I try to guard against by using for my book the title "Jummoo and Kashmir Territories," and by restricting the use of the word "Kashmir" to the very defined tract that from time immemorial has borne the name. It must be understood, moreover, that the above title held by the Maharaja is not complete as denoting all the territories ruled by him; for these include, besides the Jummoo districts and Kashmir, the more distant countries of Ladākh, Baltistān, and Gilgit, all of which will come under our notice.

The relationship, physical and political, of this tract with India now deserves our attention. The map of India, given with this book, will help us to understand its position at the edge of

the great plain of India which sweeps unbroken from the mouths of the Ganges to the western part of the Panjāb, continuously skirted on the north by the Himalaya Range, which has a direction varying in a curve from east and west to south-east and north-west. It is the last strip of the plain and the wide mass of the mountains on the north of the Panjāb that make up the territory. Politically, it is a government tributary to the Queen, with relations defined by certain treaties, which will be more fully spoken of hereafter, but whose result may here be said to be that the ruler is obliged to govern his foreign politics according to the views of the Government of India, while in domestic administration he is nearly independent.

Measurements of the territory show it to have a length in one direction, from south-east to north-west, of close on 400 miles, and at right angles to that, from south-west to north-east, of 350 miles. Measured from south to north it may be said to extend for 240 miles from lat. 32° 30′ to lat. 36° N.; and from east to west, for 350 or 400 miles, from long. 73° 30′ to 80° E.; these, however, must be taken only as general measurements, the irregularity of outline prevents a more definite statement in brief. The area I estimate at 68,000 square miles.

The form of the ground we have endeavoured to represent on the maps both by careful attention to the hill-shading and by the statement of the heights of certain positions. Under the heading of each tract described much will be said on this subject; but at this stage it is advisable to give a slight sketch of the vertical geography of the whole area.

The lowest part is the strip of plain on the south-west, which is continuous with the great level plain of the Panjāb; it is 900 or 1000 feet above the sea.

The mountains begin along a very definite line. The first ridge is a line of hill from 1000 to 2000 feet above the plain, that is to say 2000 or 3000 feet above the sea. Next comes a tract of rugged country, which includes various ridges running nearly parallel to the first one, with long narrow valleys between them. These ridges are 3000 and 4000 feet high, while the valleys have

commonly a level of near 2000 feet. This and the outermost ridge together I call the Region of the Outer Hills. It is on the whole a rugged space, partly covered by a low forest or by scrub, partly of bare sandstone rock.

Next within is the tract to which I give the name of "The Middle Mountains." It is a space occupied by hills commonly of 8000 to 10,000 feet in height, covered with pasture or else with forest. These hills are not, like the last, in parallel lines, but in ramifications, divided by equally ramifying valleys. Some of the valleys reach to as low as 2500 feet.

We now come to more lofty mountain ranges, which rise first to rocky heights and then to the region of perpetual snow. A great chain of snowy mountains, running south-east and north-west, divides the drainage of the Chīnāb and Jhelam rivers from that of the higher branches of the Indus. Its summits vary from 27,000 down to 15,000 feet; in one part of it peaks of 20,000 and 21,000 are not uncommon. What may be called branches from this enclose the valley or plain of Kashmir with hills, of which many are 14,000 to 15,000 feet high, the wide valley encircled by them itself being 5000 and 6000. All beyond that great range we find to be a wide tract of mountainous country, the whole of which is at a high level; it is the north-western part of Tibet; Ladākh and Baltistān are divisions of it, and Gilgit may, in a physico-geographical point of view, be said to belong to it. Here the mountain ranges are of heights of from 17,000 up to 22,000 feet and more; one peak (which yet is unnamed, though the second highest known in the world) has an altitude of 28,265 feet.* The valleys of this region vary much in character; in the south-eastern part are high-level flat valleys, from 1 mile to 5 or 6 in width, at elevations of 15,000 and 14,000 feet; from that, as one goes north-westward, their height descends, the space at the same time narrowing, lofty mountains always bounding them, ultimately to as low as 5000 feet above the sea; at the lower levels also are sometimes widenings of the valley-bottom.

* This altitude has been determined trigonometrically by the Great Trigonometrical Survey of India; the peak is numbered on their maps K 2.

In a few places are table-lands; they are flat spaces surrounded by mountains; too wide to be called valleys, I thus differently class them. The most remarkable are the Deosai plateau, and the plateau of Lingzhithang and the Kuenlun plains; the former is 12,000 or 13,000 and the latter 16,000 to 17,000 feet above the sea.

With these great variations of level the climate must necessarily be different for every region. The temperature ranges from the more than tropical heat of the Panjāb summer to such an intensity of cold as keeps perpetual snow on the mountains.* In the inhabited places even the variation is such that in the lower parts the fashion of the poor of India of going almost unclad is followed; in the higher, sheep-skin coats are wanted for protection against the cold, and people are, in places, confined to their houses by snow for seven months in the year.

Besides temperature, there is the element of moisture, which gives another variety to the climate. We may distinguish roughly countries of four degrees of humidity :—

(1) Where the periodical rains prevail.

(2) Where the periodical rains do not reach, but there is rainfall enough for all crops but rice without need of irrigation.

(3) Where no crops can be raised without irrigation and the hill-sides are for the most part bare, but some forest grows on portions of the mountain slopes.

(4) Where no crops can be raised without irrigation, and the whole country is bare both of forest and of pasture; this tract is nearly rainless.

The greatest degree of difference in aspect of country, and probably in absolute degree of moisture, is between the first two on the one hand and the last two on the other.

The first region includes the Outer Hills and the Middle Mountains. The second is Kashmir. The third and fourth are on the far

* For the altitudes at which perpetual snow occurs see Chap. XXII., under the heading "Snow Map."

side of the great watershed range; the third, which may be said to have a semi-Tibetan climate, includes Astor with some parts of Gilgit and Baltistān, and the fourth, that which enjoys the Tibetan, or almost rainless, climate, takes in the rest of Gilgit, the greater part of Baltistān, and all Ladākh.

Now let us enter on the subject of the peopling of this country, of the races of men who inhabit it. Varied as it is in form and other physical characters it is little less so in its population. The several tribes that dwell here, dotted over the lower hills or sheltering in the valleys that divide the loftier mountains, are, some, of widely different origin, and some, though of nearer relation, still of widely different character. There is here to be found, by one who would work it out in detail, ample illustration of the principles of Ethnological Science and a store of facts to fill in parts of it where our knowledge is wanting. All that I myself can hope to do is to put down some of that information which can be acquired by a traveller not trained to these inquiries.

The following is the list of the races which have a distinct geographical distribution, and such characteristics as to render the description and separation of them practicable.

Aryan.

Dogrā.	Kashmīrī.
Chibhālī.	Dārd.
Pahārī.	

Turanian.

Tibetan: subdivided into Baltī, Ladākhī, Champā.

This classification is more national than tribal. For the southern parts especially another division might be attempted—that is, one according to castes. But though certainly such a classification would tend to throw more light on the origin, the sources, of the different tribes, yet in the present state of our knowledge, without more detail as to the subdivisions of castes than we have at present, it would not be practicable, and in any case would not be one that could be expressed on a map as I have done with that here

adopted. My own at all events expresses the actual national distinctions.

Each race will be described as we come to the country inhabited by it, but here too a few words may be said.

The Dogrās and Chibhālīs were originally one, but they have now become separated in many characteristics, from the latter having become Muhammadans, while the Dogrās remained Hindū. They are well-featured races, of rather slight build; together they occupy all the Outer Hill region.*

The Pahārīs are a stouter race, hardy, as befits those who live for part of the year among snow; for these inhabit the eastern part of the Middle Mountains, on which snow falls to a considerable depth. They are in great majority Hindū. The name "Pahārī" simply means "mountaineer," but in these parts it is restricted to this particular race.

The Kashmīrīs, though allied to the Pahārīs, are a race possessing very marked characters; they are large-made and robust, and of a cast of features really fine; they occupy their own mountain-bounded country of Kashmir, and have, besides, overflowed it here and there and settled in the higher parts of the neighbouring valleys and in outlying places. They are in large proportion Muhammadan, but some fraction of them remain Hindū.

The Dārds are a race who, though Aryans also, are very different and easily distinguishable from Kàshmīrīs. With a very curious exception, that will be noted under Dārdistān, they also are Muhammadans. They dwell in the highly mountainous country north of Kashmir; they abut against the Tibetan Baltīs on the east, and have as their neighbours on the west the Pathāns or Afghāns.

All these hitherto enumerated races have features distinctly of the Aryan type, still with marked differences among themselves, which will be noted in the succeeding chapters.

* In reality the Chibhālīs include, besides Muhammadanised Dogrās, some people of other tribes, who also have become Muhammadans. More will be said on this subject in Chap. III.

The Tibetan races, whom we now reach, have the characteristics of the Turanian family (of which the Chinese and the Japanese are the instances most known to Englishmen) in varying degree. The Chāmpās have those features most markedly, next the Ladākhī, and in a less degree the Baltī. The two first of these subdivisions are Buddhist in religion, the last Muhammadan. Of these Tibetan races are the people who live in the loftiest of the inhabited regions; the Chāmpās, who are nomads, wander among the high-level valleys of Rupshu; the Ladākhīs, who are a settled and cultivating race, are in villages which in height above the sea vary from 13,500 to 9500 feet; the next, the Baltīs, are found at from 10,000 or 11,000 down to 6000 feet.

As for the languages spoken, a separate chapter treats of them, and some facts of their distribution are given in the explanation of the Language Map.*

Countries separated by so many mountain chains; races so widely different; how did they all come to be under one ruler?

The answer to this almost resolves itself into the history of one man, of the one who by exercising with wonderful persistence the qualities of a soldier and a diplomatist succeeded in raising himself from an inconspicuous station to a position in which his adherence and goodwill became of extreme value to the British Government in India, who, in their turn, enabled him to achieve an object that for long had been dear to his heart, and in giving over to him Kashmir completed the agglomeration of all the countries we are treating of into one state. This man was Maharaja Gulāb Singh, the father of the present ruler.

I shall attempt a brief sketch of the course of the events which led to the result above pointed out.

From time immemorial—the natives say for 5000 years—Jummoo has been the seat of the rule of a Hindū dynasty, of a family of Rājpūts, whose influence spread for some distance over the lower hills, the extent of that influence varying, no doubt, at different times. There was little intercourse with the outer world;

* See Chap. XXI., on Languages, and Chap. XXII., In Explanation of the Maps.

some contact with it occurred indeed during the time from the sixteenth century onwards from the passage near, if not through, the country of the Mughal Emperors of Delhi towards Kashmir; or again when one of the Western invaders of India swept along at the foot of the hills, and the hill-men were able to annoy his armies while congratulating themselves on the rugged character of their own country, which made it by its poverty unattractive and by its difficulty of access even repulsive to those bent on rapid conquest and plunder. A little after the middle of the last century we find that the power of the Jummoo ruler, exercised either directly or by feudatory chiefs owing allegiance, extended eastwards to the Rāvī River or nearly so, westwards to some miles beyond the Chīnāb, southwards for some little way into the plains, and northwards as far as the beginning of Middle Mountains. The feudatory chiefs, those for instance of Akhnūr, Dalpatpūr, Kiramchi, &c., governed their own subjects, but to the ruler of Jummoo they paid tribute and did military service. During a portion of the year they would be present at Jummoo itself, attending the court of the ruler and holding separate ones themselves. At this day various spots in that town are remembered where each of these tributaries held his court on a minor scale. Doubtless there was some petty warfare, resulting sometimes in an extension and sometimes in a contraction of the power of the central ruler; but usually the chiefs were more occupied in sport than in serious fighting, and the various families continued in nearly the same relative positions for great lengths of time.

The rest of the Outer Hills and some of the Middle Mountain tract were thus occupied:—Eastward of Jummoo there were independent rulers at Basolī and Kishtwār, of Rājpūt caste, some few details of whose history will be given as we come in our geographical survey to each of those places. North-westward of Jummoo were the two small states of Bhimbar and Rājāorī, whose rulers were Muhammadans, Muhammadanised descendants of Rājpūt Rajas, still bearing the Hindū title of Raja and still recognized as belonging to certain subdivisions of the Rājpūt caste. These two had, I think, become more closely connected

with, more completely dependent on, the Delhi power, before its breaking up, than had the Jummoo Raja, because the highway along which the Delhi Emperors used to march from India to Kashmir led straight through their territories and past their very castles. But after the decline of the power of Delhi and the occupation of Kashmir by the Pathāns or Afghāns (who were connected with Kābul and not with India) these rulers of Bhimbar and Rājāorī became again as free and independent as the one of Jummoo. Farther west, up to the Jhelam River, the ground seems to have been occupied politically by local chiefs, ruling each over but a few villages. These, all Muhammadans, ruled over Muhammadan subjects. Still in many cases the Hindū origin of both can be traced. The importance of these was nearly the same as that of the lesser chiefs of the Jummoo side; but they seem to have kept more separate, and not to have agglomerated, not to have come under any one ruler as feudatories, but to have kept independent; so that almost village by village the country was governed by separate Rajas, and to this day many headmen of villages in that western tract bear the title of "Raja."

We have thus accounted for most of the country up to the first great mountain range. Of Kashmir and Ladākh we will speak later; but now we must come back to Jummoo, on which place hinged the coming fortunes of all these regions.

At Jummoo, in the middle of the eighteenth century, ruled Raja Ranjīt Dev, a man whose qualities as a ruler are there spoken of with the highest respect. He has a reputation for having been a wise administrator and a just judge. He was a tolerant man; he encouraged Muhammadans as well as the people of his own faith; under him many were attracted to Jummoo, and the town spread and flourished. Up to this time the state of independence of the mountaineers had continued. But his epoch was both the culmination and the beginning of the end of the old state of things. With his death, which occurred about 1770 or 1780 A.D., began changes from outside influences, which only ended when, in the year 1846, the ruler of Jummoo became tributary to the East India Company.

At the time of Ranjīt Dev the Sikhs had become rulers—not, indeed, in any organized form, but in separate clanships—of that portion of the Panjāb which adjoined the Jummoo territory on the south. The ardour of fighting was so strong in these Sikhs that all their neighbours were likely, in turn or as occasion might lead, to feel its effects. In the case of Jummoo the occasion arose soon after the death of Ranjīt Dev.* The disputes for succession which have been so common in Oriental dynasties, and not least common when the question is of succession to a firm and able ruler, here also sprung up. George Forster (who, probably, was the first Englishman who ever set foot in Jummoo) tells us that of three sons of Ranjīt Dev, one killed the intended successor and imprisoned the third, but that this one, escaping, made his way to the Sikhs, who took up the quarrel for an excuse for invading and laying waste the country. Mān Singh,† the head of one of the Sikh clans (whose son, Ranjīt Singh, afterwards combined all the clans, and from them made a monarchy that lasted for a generation), plundered Jummoo, and from this time the old hill principality became dependent on the new sect that dominated the Panjāb. These Sikhs, about the same period, but under, I think, different leaders, from different clans being concerned, penetrated into other portions of the Outer Hill region. For instance, Basolī was occupied by them some time before 1783, and, probably later, Rāmnagar also fell to them. In most cases some scion of the old reigning families was kept in as tributary ruler, for it would have been difficult for the Sikhs themselves, unused as they were to rugged ground, to govern directly the scattered inhabitants of such a rough hilly country. This arrangement again naturally brought about or gave opportunities for disturbances and revolts, which continually occurred. The unsettled state of the hills was a source of disquiet to Ranjīt Singh, when, having got possession of Lāhor, he had become chief ruler of the Sikhs. In tracing

* I am not certain whether or no in Ranjīt Dev's own time influence had been exerted by the Sikhs so as to bring Jummoo in any way tributary to them. At all events, it was not till after his death that active interference on their part occurred.

† This name is erroneously given in some English books as Maha Singh.

out Ranjīt Singh's efforts for the settlement of the hill districts, we come in contact with the family who exerted for so many years an important influence in the Lāhor state—an influence which much affected the English in their dealings with it—and between whom and the English Government the relations that were entered on constitute the foundation of the present political constitution of the territories we speak of.

J. D. Cunningham, in his 'History of the Sikhs,'* shows that from a brother of Ranjīt Dev, Raja of Jummoo, were descended, in the third generation, three brothers, Gulāb Singh, Dhiyān Singh, and Suchet Singh. These three were young men at the time when Ranjīt Singh's rise to chief power at Lāhor made that the most likely place for the advancement of those whose only trade was fighting. The two elder brothers, Gulāb Singh and Dhiyān Singh, came to Ranjīt Singh's court with the object of pushing their way as soldiers of fortune. Gulāb Singh first became a *sawār*, or trooper, under Jemadār Khushiāl Singh, a trusted servant of Ranjīt Singh's. I do not know what was Dhiyān Singh's first step; but it was not long before he attracted the attention of the ruler, for he was a young man of considerable gifts of person as well as mental talents. He obtained the special favour of Ranjīt Singh, and before long was advanced to the important post of deodhīwālā or deorhīwālā, that is to say, chief door-keeper. In a native court, a place of personal government, the door-keeper, possessing as he does the power of giving or restraining access to the chief, has considerable influence; this influence Dhiyān Singh now exerted in "making a party," so as by this means, as well as by his own exertions with the Maharaja Ranjīt Singh, to advance his family. The personal qualifications of the brothers at the same time helped, and it was not long before the fortunes of all three—for Suchet Singh had joined his elder brothers—became well founded.

Gulāb Singh rose to the independent command of a troop, and in one of the hill wars he distinguished himself by taking

* I have repeated in Appendix VI. the genealogy given by Cunningham.

prisoner Āgā Jān, the Raja of Rājāorī, who was then resisting the Sikh forces. For this service, and with the object of utilizing those of the families of hill rajas who were attached to his government in keeping in subjection the tribes that had been giving trouble, Ranjīt Singh conferred on Gulāb Singh the rajaship of Jummoo, to be held as a fief. This was about the year 1820. On the brothers Dhiyān Singh and Suchet Singh was also bestowed the title of Raja, and they received, whether at this time or later I know not, a portion of territory to be held on the same terms as was Jummoo by Gulāb Singh. Dhiyān Singh received Pūnch as his principality, and Suchet Singh Rāmnagar.

It is with Raja Gulāb Singh that we are now chiefly concerned. While Dhiyān Singh remained at Ranjīt Singh's court performing an important part in protecting the interests of the family by securing his own influence with the ruler, to whom they were all tributary, and on whom indeed they were still thoroughly dependent, Gulāb Singh spent most of his time at Jummoo and in its neighbourhood, occupied first in consolidating and then in extending his power, though, as occasion required, he would, as was his bounden duty, join the Sikh army with his forces, and take part in their military operations.

Gulāb Singh's own immediate subjects had, by the continuance of disturbances, the absence of settled rule, become somewhat lawless; robbery and murder were common; it is said that at that time a cap or a pagrī that a traveller might wear was enough for a temptation to plunder and violence. With a firm hand Gulāb Singh put this down, and brought his country to such a state of quiet and security as makes it at this moment in that respect a pattern. As to the feudal chiefs around him, he in some cases—for what particular causes or with what excuses it is difficult at this time to trace—confiscated their fiefs and became direct ruler; in other cases he retained and attached to his government the nobles, while gradually lessening their political importance. The tendency of his government was always towards centralization. He was a man of stronger character than most of

the rulers that had preceded him, and probably his experience in the wider area of the Panjāb had taught him both the advantages and the feasibility of relatively diminishing the power of feudal subordinates.

Gulāb Singh in later years came in contact with many Englishmen, and several of these have written their impressions of his character. I myself never saw him; he died before I came to Jummoo; but his doings and sayings were still much thought of there, and I endeavoured to form, from what I heard, an estimate of his character.

Of his powers as a soldier I was unable to form a clear judgment. He seems to have been thoroughly brave, but always careful and prudent. Though no great feats of arms are recorded of him,* yet he was generally successful. He was more ready to intrigue than to employ force; but when the necessity for fighting was clear, he proved almost as much at home in it as he was in diplomacy. A great part of his success was due to the wisdom he displayed in recognizing the times when each could with most advantage be brought into play.

As an administrator he was better than most of those of his own time and neighbourhood, but yet the results of his rule do not give one the highest impression of his powers in this respect. He knew how to govern a country in the sense of making his authority respected all through it. For the carrying out of the further objects of good government he probably cared little; his experience had shown him no instance of their attainment, and possibly he had not in his mind the idea of a government different in kind from that which he succeeded in administering; for of all the governments within reach of his observation those were good in which the authority of the ruler was assured by force and the revenue came in punctually. On this principle he consolidated his power.

One of his chief faults was an unscrupulousness as to the means

* The defence of the Lāhor fort with a small force against the Sikh army, in the time of the dissensions, is, however, a brilliant deed of his that now comes to my mind.

of attaining his own objects; he did not draw back from the exercise of cruelty in the pursuit of them, but he was not wantonly cruel. An avariciousness always distinguished him; in the indulgence of the passion he was unable to take the wide view by which his subjects' wealth would be found compatible with the increase of his own.

Some qualities had Gulāb Singh which mitigated the effects of an administration worked on the principles above denoted. He was always accessible, and was patient and ready to listen to complaints. He was much given to looking into details, so that the smallest thing might be brought before him and have his consideration. With the customary offering of a rupee as *nazar* anyone could get his ear; even in a crowd one could catch his eye by holding up a rupee and crying out "*Mahārāj, 'arz hai!*" that is, "Mahārāja, a petition!" He would pounce down like a hawk on the money, and having appropriated it would patiently hear out the petitioner. Once a man after this fashion making a complaint, when the Mahārāja was taking the rupee, closed his hand on it and said, "No, first hear what I have to say." Even this did not go beyond Gulāb Singh's patience; he waited till the fellow had told his tale and opened his hand; then taking the money he gave orders about the case.

The rise from comparatively low station to high position did not spoil him; that is to say, he did not become stuck-up with pride, nor did he often stand greatly on his dignity; indeed, he was ordinarily familiar and free with all classes, and was distinguished by that quality which in a ruler otherwise respected goes so far to conciliate the natives of India, that which they call *bhalamānasī*, which may be translated "bonhomie." This is the more noteworthy as those faults he was free from are the ones most generally contracted by people of his caste who raise themselves in social rank.

This picture of Gulāb Singh's character is different from some accounts of him that have appeared in books that tell of the late history of the Panjāb. I have written from the impression I received from all I heard of him from servants or from subjects of

his. To fortify my conclusions I will now quote from the 'History of the Sikhs,' by J. D. Cunningham, an author who wrote with rare impartiality, one who was able to divest himself of the prejudices of his own nation in estimating the qualities and the deeds of their enemies. Writing at the crisis of our relations with the Panjāb State, a time when Gulāb Singh's name was in everyone's mouth, he says,* "In the course of this history there has more than once been occasion to allude to the unscrupulous character of Raja Golab Singh; but it must not therefore be supposed that he is a man malevolently evil. He will, indeed, deceive an enemy and take his life without hesitation, and in the accumulation of money he will exercise many oppressions; but he must be judged with reference to the morality of his age and race and to the necessities of his position. If these allowances be made, Golab Singh will be found an able and moderate man, who does little in an idle or wanton spirit, and who is not without some traits both of good humour and generosity of temper."

Having thus seen Gulāb Singh firmly fixed at Jummoo, we must, before tracing the acquisition by him of further territory, look to the early state of the other countries that now form part of the dominions under the government of Jummoo, beginning with Kashmir.

The Hindū history of Kashmir, which was brought into notice by Professor H. H. Wilson, tells of a succession of kings who ruled in the valley, and tells something of their relations with their neighbours. We cannot enter into these records, but of some of the events that have occurred in the last five centuries we will note the succession, since each change within that period has left its mark on the country recognizable by all at this day.

In the beginning of the fourteenth century after Christ the last Hindū king of Kashmir lost his throne. One Shāh Mīr, his minister, a Muhammadan, displaced him and ruled under the name of Shams-ud-dīn. For about two centuries and a half Kashmir remained independent, governed by its own Muhammadan rulers. Of these there were two most noted, whose names

* Cunningham's 'History of the Sikhs,' p. 332, note.

are still in the people's mouths; one was Sikandar, surnamed But-shikan or Iconoclast, who came to the throne in 1396 A.D., and used his power to destroy the ancient Hindū temples; the other was Zain-ul-āb-ud-Dīn, also called Bar* Shāh, who distinguished himself by erecting buildings of beauty and utility in the city of Sirīnagar and in other parts of the country.

The next great change was the invasion of Kashmir by the Emperor Akbar. After some repulses and difficulties that potentate conquered the country. This was in the year 1588; from that time to now the Kashmīrīs have been ruled by aliens; since then three times at least have their masters been changed, but in no instance have they had any voice or influence in brinigng about the change. The Mughal rule (as the natives of India call that which was exercised by the Emperors who had their seat at Agra or at Delhi) lasted in Kashmir for something more than a century and a half. That country was governed by viceroys of the Emperors, who were called by the title Sūbadār, or, later, simply Sūba. It was also frequently visited by the Emperors themselves in the hot weather, and it was these journeys of the court that brought the name of Kashmir to the ears of the Westerns; it was this period when its fame in Europe arose; for the successive Emperors—Akbar, Jahāngīr, Shāhjahān, and Aurangzeb—both constructed palaces and gardens whose position in the midst of lovely scenery and delicious air gave them a reputation beyond what their architecture alone could merit, and also filled these with a Court whose magnificence, drawn from the resources of half India, had never before and has never since been equalled in that mountain kingdom.

After the death of Aurangzeb the weak state of the Delhi power was reflected in the disturbed condition of Kashmir, which was ruled over by governors and governors' deputies appointed by those who one after the other gained the upper hand at Delhi.

The Kashmīrīs got fresh masters about the years 1752–1754, when Ahmad Shāh Abdālī, the invader of India, conquered Kashmir through one of his lieutenants. From that time for nearly

* In this name the *r* is cerebral

seventy years Kashmir was subject to the Pathāns or Afghāns, being ruled over by governors sent by the King of Kābul. The rule of these Pathāns was the harshest of all.

Again, as a new power arose in its neighbourhood, Kashmir received new masters. The Sikhs, as they grew in importance, and as their power waxed by reason of the political unity which Ranjīt Singh gave to the nation, became able to cope with the Pathāns and to vie with them for the possession of the prize country. Though Ranjīt Singh failed in an attempt on the valley in 1814, yet in 1819 he succeeded in wresting it from the Pathān rulers, and the small minority of the Kashmīrī nation who had remained Hindū saw at last, after an interval of 500 years, governors of their own faith. For the next five-and-twenty years Kashmir was ruled, quietly if oppressively, by successive governors sent by the Sikh Government at Lāhor. At the end of that time its history will join with the other threads of our narrative.*

We must now return to the proceedings of Raja Gulāb Singh, whom we left, soon after 1820, well settled at Jummoo.

The details of the extension of his power in the Outer Hills it

* As we draw near to our own times it may be useful to give more details of names and dates. I give here a Table of the Governors of Kashmir under the Sikhs; this will be useful to the traveller, for one is always hearing in that country that such-and-such a thing happened when so-and-so was Governor, and this Table will fix the date.

SIKH GOVERNORS OF KASHMIR.	A.D.
Conquest by the Sikhs	1819
Mōtī Rām	1819
Harī Singh	1820
Mōtī Rām (second time)	1822
Gurmukh Singh, with Chūna Lāl as *Peshkār* or Factotum ..	1823
Kirpā Rām, son of Mōtī Rām	1825
Bamma Singh	1830
Sher Singh (son, reputed, of Ranjīt Singh)	1831
Jemādār Khushiāl Singh (in some degree under Sher Singh)	1832
Colonel Miān Singh	1833
Shekh Ghulam Mahai-ud-dīn	1842
Shekh Imām-ud-dīn (son of Ghulām Mahai-ud-dīn)	1845

In 1846 the country fell into the hands of Raja Gulāb Singh, as will be related farther on.

I may here acknowledge the sources from which these and the other dates in Kashmir history are derived, namely, Wilson and Newall, in the publications of the Asiatic Society of Bengal, and Prinsep's Useful Tables.

is not necessary to enter into. Roughly speaking, in the next ten or fifteen years all the Outer Hill region and a considerable portion of the Middle Mountains became, with the exception of Rājāorī, completely subject to either Gulāb Singh or his brothers; and the interests of these three were at that time one. His next ambitious attempt was on the country of Ladākh, which he had been led to think much of by his occupancy of Kishtwār, which commanded two of the roads into Ladākh.

The invasion of Ladākh Gulāb Singh did not in person lead; probably it was impossible for him to go to parts so distant from the Panjāb, where his presence was required more or less every year. His lieutenant for the expedition was Zurāwar Singh, of the caste of Rājpūts called Kaluriā, a man who had risen from the ranks in Gulāb Singh's service, and was distinguished by a zeal for his master's interest above his own, and who now proved that he had many of the qualities necessary to make a successful military leader.

Ladākh, the physical characters of which have already been lightly touched on, was at that time an independent Buddhist kingdom, having a spiritual and a slight political connection with the Grand Lāmā of Lhāsa. It was much isolated by its position at the back of the great Snowy Range; only a limited number of merchants who traded to it knew anything of the truth about it. Still the Dogrā leaders determined to attempt its conquest. The history of their invasion is well told by an actor in it in Cunningham's book on Ladākh. Here it is enough to say that after two campaigns the whole country of Ladākh became subject to Gulāb Singh.

The neighbouring Muhammadan principality of Skārdū shared the same fate a few years later. Ahmad Shāh, the Raja of that place, had mixed himself up with the Ladākhīs in their struggles and intrigues against the Dogrās, so on the first opportunity Zurāwār Singh turned his forces against him, and in the year 1840 took him prisoner and annexed his territory.*

* Though it is off the line of this narrative, yet it may be of some interest to mention that the courageous Zurāwar Singh, in invading the Lhāsa territories, was overtaken by winter, and, being attacked when his troops were disabled by cold, perished with nearly all his army. This was in November, 1841.

In the year 1843 the death of Raja Suchet Singh without issue caused the principality of Rāmnagar to fall to his eldest brother Gulāb Singh; so by this time that fortunate ruler had acquired all the territories included in the present boundary, with the exceptions of Kashmir, Gilgit, Rājāorī, and Pūnch, this last being occupied by Raja Jawāhir Singh, the son of Raja Dhiyān Singh, who, like Suchet Singh, had lately been killed near Lāhor.

The next event that changed the boundary was the breaking out of the war between the Sikhs and the British in the winter of 1845–6. Gulāb Singh had for some time kept aloof from Lāhor politics and was not involved in the court intrigues that led to the movement of the Sikh troops against British territory; neither did he hurry down with his troops to help the Sikhs as he would have done in the time of his old master Ranjīt Singh. He kept away until the decisive battle of Sobraon was fought, at which victory declared for the British. Then he appeared almost as mediator between the two contending powers, for after the various revolutions and massacres that had lately occurred at Lāhor, and the late defeats of the Sikh army, there seemed to be none but Gulāb Singh who could shape events, who could guide the Sikh nation to any sensible course. The confidence of the British too he had before acquired; especially had Sir Henry (then Colonel) Lawrence, who was now one of the diplomatic officers employed in the negotiations, formed both a friendship for Gulāb Singh and a high opinion of his sagacity and of his usefulness to those who could enlist his interests.

The result of all this is embodied in two treaties, which will be found, in whole or in part, in Appendix V.

By the first, which was made between the British Government as represented by Lord Hardinge, and the state of Lāhor, there was ceded to the East India Company in perpetual sovereignty, as equivalent for one crore of rupees (or 1,000,000*l.*) of indemnity, the hill countries between the rivers Byās and Indus. Thus all the countries we have been treating of, both those at that time in the hands of Raja Gulāb Singh, and Kashmir and others then directly ruled by the Sikhs, were on the 9th March, 1846, handed over to the British.

But now comes the second treaty, dated 16th March, 1846. This was made between the British Government, represented by the Governor-General as before, and Maharaja Gulāb Singh, the higher title of Maharaja being by this very mention conferred. Its effect is this, that "the British Government transfers and makes over for ever, in independent possession, to Maharaja Golab Singh and the heirs male of his body, all the hilly or mountainous country, situated to the eastward of the river Indus and westward of the river Ravee,"* in consideration of which, by another article of the treaty, Maharaja Gulāb Singh agrees to pay to the British Government the sum of 75 lakhs of rupees—about 750,000*l*.

The result of this treaty (of which the other provisions can be learnt from the Appendix) was to place Gulāb Singh in a far better position than he had ever had before. He exchanged for the Sikhs, whose attitude to him was ever varying according to the favour in which he might be held by those who for the time were leaders of them, a nation whose boast it is that they hold treaties sacred, and who had now contracted with him a treaty, the provisions of which fairly carried out could not fail to be agreeable to him. Lastly he gained, in addition to his former acquisitions, the coveted country of Kashmir.

The handing over of Kashmir was not effected without some trouble. Maharaja Gulāb Singh sent a trusted officer with some troops to take over charge; he, however, was opposed by Shekh Imām-ud-dīn, the Sikh governor, who was supported in, or rather incited to, this course by a faction in the Lāhor Darbār who were adverse to the British. Gulāb Singh's troops were defeated at the outskirts of Sirīnagar and many were slain; a remnant, however, threw themselves into the fort called Hari Parbat and there held out. On this Gulāb Singh appealed to the British to carry out the provisions of the treaty, and action was at once taken. A force partly of British and partly of Sikh troops was put in motion, and they had even made one march within the hills from Bhimbar, when events turned in such a way that their advance was no longer necessary.

* For some remarks as to the effect of these words see Chap. XIX.

For at this juncture Colonel Lawrence reappeared, having been absent from the Panjāb for some months on leave, and his diplomatic management staved off the collision that was imminent. Colonel Lawrence entered into correspondence with Shekh Imām-ud-dīn, the result of which was that the Shekh gave up the game and came away from Kashmir in peace, meeting on the road, at Thanna, Colonel Lawrence and Gulāb Singh, who then proceeded to Sirīnagar. The transfer of the country was thus completed without further disturbance.

One great object which the Governor-General had in view when he made this arrangement for the Jummoo and Kashmir territories was to lessen the force of the Sikhs by establishing on their flank a power independent of them and inclined to the British. This object may be said to have so far succeeded that, on the next and final trial of strength between the Sikhs and the British (which occurred two or three years later), Gulāb Singh's aid was withheld from the nation to which formerly belonged his allegiance. But the result of this last struggle, which was nothing less than the absorption of the Panjāb into the British Empire in India, rendered that object useless or superfluous. Hence some have been led to think that it was a great pity, a great mistake, to have made the treaty that separated Kashmir from the Panjāb, since, but for that, the oft-coveted country would have fallen into our hands at this time, namely in 1849. As far as this is a criticism of policy, and not merely regret at the loss of a possible piece of good fortune, it is enough to point out that in 1846 no one expected that the Panjāb would fall into our hands in 1849. At that former date we were arranging for the government of the Panjāb by its own native rulers—by the young Maharaja Dhuleep Singh and the Darbār or Council of Ministers. Our Government was hoping to form a stable government at Lāhor, and not reckoning on its downfall or its absorption by ourselves. Not till two years after the treaty had been entered into with Gulāb Singh did those events, at that time unforeseen, occur which are brought forward as reasons for not entering into that engagement.

Later political events have not largely affected the status of

the territories, nor much altered their boundaries. On the outbreak of the mutiny of 1857, Maharaja Gulāb Singh chose his side and threw in his lot with the British, moving down a force to aid in the siege of Delhi. Hardly had he done this when death overtook him. His surviving son, the present Maharaja, Ranbīr Singh, who was then on his way to the Panjāb with the troops, returned to take his place in the government of the country, while another commander proceeded to Delhi with the force.

Since that time all has been quiet, except on the north-west frontier, which has been the scene of oft-recurring small wars, some of which are recounted in Chapter XIX., on Dārdistān History. One other treaty has been made between the British Government and the Maharaja, which is given in full in Appendix V. This was done in 1870. It is a commercial treaty designed to open a particular route between the British hill-districts and the Yārkand country through a portion of the Maharaja's territory which is necessarily traversed.

The countries thus acquired, and, by the political events of 1846, solidly compacted, are divided up for the purposes of government into regions whose limits correspond in some measure, but not altogether, to the old boundaries. In the "Political Map" I have indicated these administrative subdivisions, and in the explanation of it in Chapter XXII. I have shortly described the kind of authority established in each.

I should hardly complete this Introduction without saying a word as to myself—as to how it was that I came to travel over this country, to penetrate into corners of it that, if they have each been visited by different Europeans, have never so many been seen by anyone of that race, or even, I believe, by any native of any of those countries.

In 1862 I entered the Maharaja of Kashmir's service, leaving for it the Geological Survey of Great Britain, to which I then belonged, and came to his Court at Jummoo. My duties for some years were confined to geological investigation, or, more exactly, to looking for minerals. This pursuit naturally led me over many of the

mountain chains. Later I had the management of the Forest Department. Lastly I had the position of Governor of Ladākh, from which I retired for the sake of again seeing England, after spending ten years in the service of the Maharaja.

I did not leave the Maharaja, his Court, and the people, without many regrets. Each race, as I became acquainted with them, excited in me a great interest, and has left a strong wish for their welfare. In the Court I formed friendships with some whose co-operation in difficult circumstances will always be remembered by me. Of my master, the Maharaja, I will only venture to say that from him, in what might have been for me an anomalous position, I received a general consideration, dictated by goodwill and by forbearance, which, without counting many special acts of kindness that he would not wish to see acknowledged here, deserve and have from me a gratitude that I am glad to have an opportunity of publicly expressing.

A few words must follow as to the plan on which this book is written.

I have not given a narrative of any of my journeys, but have taken each tract in succession, and described the physical and other characteristics of it. Besides this, I have given an account of some of the lines of march that join the several tracts; this by way of introduction to them or to show how they are physically separated yet connected by practicable lines of communication.

I begin with the part next to the plain of the Panjāb, the region of the Outer Hills. One chapter treats of their physical aspects, another treats of their inhabitants generally, a third gives a description of Jummoo, the chief place in the Outer Hills, and the capital of the whole country, and of the Court, whose seat is at Jummoo, while a fourth gives notes on certain other places in the same hills.

Next, in Chapter VI., we visit the region of the Middle Mountains, certain portions of them being in some detail described. The subordinate headings will show in what order the various localities are treated of, and that an account of the people who live there also finds a place.

In Chapter vii. is described the march from Jummoo to Kashmir. Thus we are introduced to that country, to which Chapters viii., ix., and x. are devoted.

Then, in like fashion, the country along the line of march from Kashmir to Leh in Ladākh is described, and we are thus brought into the great tract at the back of the Snowy Range. The account of Ladākh is begun by a chapter (xii.) on the inhabitants; then follows a somewhat detailed description of the different parts of that country, the Chapters xiii., xiv., and xv. being allotted separately for the lower valleys, the higher valleys, and the plateaus.

Baltistān comes next; it is described in Chapter xvi., where the sub-headings will show the course that the description takes.

For the less-known country of Dārdistān there are the four Chapters xvii. to xx.

Thus far the account has gone according to locality. There next comes a chapter on a subject which it seemed best to treat by itself. The few remarks I find myself able to make on the very interesting subject of the languages will be found in Chapter xxi.

The last chapter is one in explanation of the maps and sections. Since I reckon on the reader making use of these on his way through the text, even when they are not specially referred to, it would not be amiss if he were to become acquainted with them by either reading this chapter first of all, or by consulting it on first referring to each of the maps or sections. It will be found to give both a description of each map, isometric view, or section, and also a short summary of some of the various subjects which are treated in a more detailed way in the body of the book.

Though such a plan for the work depends not at all on the order of my journeys, it may be well here to note in what years I visited certain portions of the country, since some of that which passed under my observation may have been true only for that time. Ladākh I saw in the years 1862 (Drās, Kargil, and Suru only), 1869, 1871, and (January) 1872. Baltistān I visited in 1863, and again in 1870; Astor and Gilgit in 1870. For other parts it is impossible to particularise; any time between the years 1862 and 1872 I may have visited them.

CHAPTER II.

REGION OF THE OUTER HILLS: PHYSICAL CHARACTERS.

THE PLAIN IN FRONT OF THE HILLS — EASTERN DIVISION OF THE OUTER HILLS — WESTERN DIVISION OF THE OUTER HILLS — CLIMATE AND VEGETATION.

On leaving the British territory of the Panjāb and entering on the Maharaja of Kashmir's dominions, no immediate physical change is seen; for the last portion of the great plain, a strip which varies in width from three or four miles up to twenty, makes part of the Maharaja's territories. We are still then on the wonderful wide plain of India, where the eye tires in contemplating the unvaried level. As in the Panjāb the trees here also are small and scant of foliage, either scattered singly or grouped round wells; here also the villages are clumps of low, flat-roofed, mud huts, not inviting in look, yet commodious for the people with their kind of life; the soil, either clay or loam, at certain times looks sterile, and at others is covered with verdure. Dull enough is the aspect of this plain when the crops are off, and the ground is a bare caked surface of dried mud, when the hot-weather haze, hiding the distant view, makes the dusty ground shade off into a dusty air. But at other times of the year—as in March, when Spring is well advanced, when the trees are in bloom, and the wheat over large undivided spaces is coming into ear—the prospect is bright and agreeable. At such a season the air is clear, and one sights the snow mountains from far off. As we approach, the unwhitened ranges of the Outer Hills come more strongly into view; getting nearer still, we see that a succession of comparatively low ridges, some rugged and broken by ravines, some regular and forest-covered, intervene between the plain and the high mountains. It is these which constitute the region of the Outer Hills.

The natives have a special name for this tract; they call it *Kandī*, which may be translated "edging"; and they contrast it with the next higher one, to which they give the name *Pahār*. *Pahār* is a word that simply means "mountain," but by the dwellers in the Outer Hills it is used for the next neighbouring mountains, those below the highest. The separation of these two tracts—the Outer Hills, and what we shall call the "Middle Mountains"—is a natural one, founded on physical differences, both geological and superficial.

The southern boundary of the Outer Hill region, that is to say the foot of the hills, is called by those who use the Persian idiom *Dāman-i-Koh*, or "skirt of the mountains"; it is a sharply-defined boundary; it can be clearly traced on the map, changing its direction, not suddenly, but with a few large and sweeping curves.

The northern or inner boundary of the same region is less defined; in some parts a line of mountains, from 8000 to 10,000 feet high, ends it off; in others, tracts having the characteristics of the Outer Hills penetrate in between the mountains; in others still these characters gradually shade off, so that one cannot point out exactly where they may be said to end.

The length occupied by these Outer Hills, within the territory we are treating of, is on an average 150 miles, from the river Rāvī on the east to the river Jhelam on the west; it is somewhat less than that along the foot, and somewhat more along their mountain boundary. Eastward and westward beyond these two rivers respectively, in the British territory, they continue on with the same features and character. Indeed we are here concerned with a part of a chain of hills of enormous length, that, with wonderful uniformity, edges the Himalayas along their course of more than 1200 miles. This is in some parts called the *Sivālik Chain.* The *width* of this Outer Hill region in our part varies from 14 to 36 miles; the greater extension is on the north and north-west, where there is both this increased width of hills that without doubt may be classed within it, and also a graduation of these into the higher mountain region.

Their elevation above the sea-level ranges from 1000 feet up to

5000; their outer base, where they rise from the plain, is about at the former level, and some points of the more inward ridges reach the latter; but the more usual altitudes are from 2500 to 3500 feet for the ridges, and from 1800 to 2400 feet for the intermediate longitudinal valleys.

In trying to give a detailed account of this area I shall first say a few words on the characteristics of the plain country that lies in front of the hills, and then, dividing the Outer Hill region into two parts, eastern and western, describe them in succession, taking first that which lies between the Rāvī and Chīnāb rivers, and next that which extends from the Chīnāb river to the Jhelam.

THE PLAIN IN FRONT OF THE HILLS.

Although in the Panjāb generally the humidity is greater the nearer one is to the mountains, yet the last of the plain, that part which adjoins the outermost hills, is a drier tract than what is farther away from them. I find two causes for this; one is that the soil is more porous, being of a lighter loam and liable to have beds of pebbles in it; the other is that ravines, which (originating in the hills) often cut across to depths of 100 feet or more, cause a complete natural deep drainage, and leave the surface somewhat arid.

In this respect there is a strong contrast with the corresponding tract under the Eastern Himalayas, where the hills are edged with the line of swampy ground called the Terai.

The level of this extreme part of the plains may be counted at from 1100 to 1200 feet above the sea. As one traverses it in a direction parallel to the run of the hills one crosses the numerous gullies or ravines (nullah or nālā is the much-used Indian word) which are of varying importance, according as they drain a smaller or a larger area. Many of these are dry in ordinary times, but show by their pebbly bed that water sometimes flows along them with force; these are they which rise on the outer slope of the first ridge. Then there are some which are never wholly dry; they usually have a small stream of water meandering over a wide low-level flat, cut down below the general level of the plain; these rise

farther back in the mountains, in the second or third ridge; they drain a larger area, and are subject to sudden falls of rain; such water-courses will in certain seasons be filled for a time by a wide and swift river, discoloured with red mud in suspension, carrying down in this way, as well as by dragging sand along the bottom, large quantities of material from the hills to the lower grounds and to the sea.

These ravines are from a few hundred yards to a mile wide; they are bounded by a sudden bank, often cut into a river cliff of a hundred feet in height that shows to view the sandy and loamy strata. Their flat bottom is mostly sandy; it is sometimes covered in part with the long tufty jungle-grass called in these parts *khar*.

The plateaus between these ravines, though, as before said, somewhat dry, have in great part been brought under cultivation; here, as the crops depend entirely on the rain, their yield varies much with the years.

The tracts where the jungle-grass abounds are frequented by the black-buck or antelope, which indeed, encouraged by the game-laws of the country, spread into the cultivated parts and even herd with the cattle. Near these grassy tracts the villages are composed of pretty thatch-roofed houses; in India straw is never afforded for the purpose of thatching, it is all used as food for the cattle; indeed from the way the treading out the corn on the threshing-floor is carried on no whole straw is left, so it is only where some such material as that stiff grass can be got from the jungles that any thatching is done.

The 70-mile strip of plain extending from the Rāvī to the Chīnāb is crossed by two large streams that deserve separate mention. These are the Ujh, that debouches by Jasrota, and the Tavī, that comes out of the hills by Jummoo. They are both rivers of perpetual flow and considerable, though much-varying, volume. They rise in the mountains at the back of the Outer Hills at an elevation of 13,000 or 14,000 feet, but not from hills of permanent snow; they have a course among the hills, the Ujh of some 50 and the Tavī of 80 miles, before they reach the

plain. The city of Jummoo is on the outermost range where the Tavī passes out through it; the town of Jasrota is in a corresponding situation on the banks of the Ujh River.

Both of these rivers are very liable to floods; these occur both in the time of the periodical rains of summer and in the season of the more irregular winter rains; the floods come down with great force, and for a time render the rivers impassable either by fording or by ferry; they can then only be crossed on inflated skins, and so the traffic of the road is stopped for some hours at a time. It is these floods that carry stones of considerable size, a foot or two across, down the bed for several miles, beyond the outskirts of the hills; the Ujh especially, which has a steeper bed and is liable to quicker floods than the other, brings down boulders of large size; even at a distance of four miles from the hills they are to be found from 2 to 3 feet in diameter. From both the Ujh and the Tavī small irrigation canals are led, so that in certain restricted spaces the cultivation is of a more productive character.

The Chīnāb, which is a great river of large volume, debouches into the plain country by the town of Akhnūr. Down to that spot the stream of it is so broken by rapids as to be unnavigable, but from Akhnūr, where its level is 1100 feet, down to the sea, boats can traverse it. At Akhnūr the Chīnāb divides into various channels, which fertilize the tract called Bijwāt, another of those places to which irrigation gives exceptional fertility. Part of this watered tract belongs to the Maharaja and part to the British Government.

Leaving the river and examining the country on the west of it, we find that generally to correspond with what we saw in the eastern part between the Rāvī stream and this Chīnāb river.

All along to Bhimbar, past the villages of Mināwar and Barnālī, lies the strip of drier plain. It is a plain with slight depressions, which occur where one crosses the sandy or stony stream-beds. Most of these stream-beds are quite dry for the greater part of the year, but there is one that holds a continuously-flowing river. This stream is the Mināwar Tavī, so called to distinguish it from its sister of Jummoo; rising a good way back among the mountains, from the Ratan Range behind Rājāorī, it finds its way

through the various ridges into the plain which it traverses until it joins its waters to the Chīnāb.

As one approaches Bhimbar the plain country is more and more cut into by ravines; it may here be called a low table-land separated by them into sections; at the edges one sees how the soil is composed of layers of sandy loam with occasional pebbles.

Opposite Bhimbar there appear on the south, in the British territory, the Khāriān Hills, a range a good deal like in structure and appearance to some of our outer hills, but quite out of the general direction of them, since it runs north-east and south-west; it may be said to belong less to the Himalayan system than to that of the Salt Range. Between these hills and our outermost range there still runs a narrow strip of plain, which for 12 miles west of Bhimbar is of that character just described, of ravines and low flat plateaus alternating. Beyond this, extending to the Jhelam, is a space of completely flat alluvial ground, little above the level of that river.

Eastern Division of the Outer Hills.

Recalling that this division is to include those which lie between the Rāvī and the Chīnāb, we will examine first the very outermost range.

The outermost hills of all belong to a ridge that, along the 70 miles between those two rivers, has the same characters. It rises from the plain with a regular and gentle slope of about 3°, that so continues till a height of some 2000 feet above the sea is reached; this slope is indented with many drainage valleys, not cut steep, but making undulations of the ground transverse to the run of the ridge. The surface of the hills is very stony; rounded pebbles cover nearly the whole of it, for the strata beneath are composed partly of pebble-beds. Still it bears vegetation; the hills are indeed clothed with forest; it is a close forest of trees 20 and 30 feet in height, mostly of two species of acacia and of *Zizyphus jujuba*,* with an underwood of the shrub called *brenkar*,

* The native names of the acacias are *Phulāī* (*A. modesta*), and *Kīkar* (*A. Arabica*); the latter is called *Babūl* in Hindostan. The native name of the Zizyphus jujuba is *Ber*.

which grows to the height of 3 or 4 feet, and has a white flower that gives out a sickly smell. Thus clothed the slope continues up to a crest. Beyond there is a sudden fall along the whole line of it, an escarpment formed of sandstone cliffs of some hundreds of feet of vertical height, below which again the ground acquires a lesser slope.

This is the first range of hills; the gentle slope faces the plains, the cliff-slope abruptly ends it off on the inner side; the whole surface from the plains to the cliff edge is an expanse of forest, but beyond the crest the ground is too steep to bear it. The run of the range, as stated before, is interrupted by the valleys that lead out through it from the inner country; these are not wide, but in some parts they are near enough together to cut the range into portions of short lengths that make almost isolated hills.

Next within the outermost range comes a tract of very irregular broken country. It is a country of ridges and sloping plateaus, cut through by very small but steep ravines. The foundation of its character is the changing degree and frequently high angle of the dip of the soft sandstone rock. So varying is the form that it is difficult to conceive any general idea of it in the mind, but when the eye gets used to the hills it perceives that many of them are of one type; on one side is a long slope; on the other a steep escarpment, the former slope coinciding with the dip of the beds. Since this dip is often 10° or 15° there arise jutting plateaus of rock of a corresponding inclination, which end in vertical cliffs of the massive sandstone. From, probably, lateral changes in the character of the beds, each ridge or sloping plateau continues but for a short distance; as one dies away or disappears others rise into prominence, parallel may be, but not in the same line.

At another part the plateau and escarpment form is obliterated from the dip of the beds reaching to such a high angle as 45° may be; instead, there are equal-sided valleys bounded by jagged ridges; these ridges run at right angles to the strike of the beds, and not parallel with it, as did those of the other form; the

serrations of these jagged ridges are formed by the projection of the harder rocks, which also continue all down the hill-side making projecting ribs.

A great part of the surface of these hills is of the bare grey sandstone rock uncovered by soil, but in some places grass and bushes have got a footing upon it, and here and there is cultivated space enough to support a family or two, or a little hamlet, but of necessity it is a tract very thinly peopled and difficult of access. To go over this ground is not easy; the paths from hamlet to hamlet are but tracks marked by the passage of feet over the sandstone, or sometimes down steps cut into it; from the inaccessibility of the cliffs, and the steepness of the ravines, the ways are tediously roundabout, and they are tiresome from the frequent rise and fall.

This irregular combination of ridges, which sometimes trend north-west and south-east (with the strike), and sometimes run across that direction (at right angles to the strike), continues, as one goes on, to a distance of ten or twelve miles from the outer skirt of the hills; then we come to a wide longitudinal valley, such as is called in the more eastern Himalayas a *dūn.*

The height of the more important of these ridges is commonly as much as 2500 feet above the sea, and in the eastern parts they rise even to 4000 feet. There is always a fall of several hundred feet to the valley or dūn; this is not in one step, but more by the ridges becoming lower in succession; Dansāl, a large village in the middle of this dūn, is some 1800 feet above the sea.

The flat valley varies in width from one to four miles; it is itself cut through by ravines; close by Dansāl a branch of the Tavī flows along in a steep-cliffed ravine at a level some 200 feet below the flat of the main valley; the Tavī River itself flows in a similar ravine, and at that low level winds across the dūn.

This longitudinal valley continues from some miles north-west of Dansāl to Basolī on the south-east, with the exception that about midway, near Rāmkot, it becomes narrowed up and indefinite; east of that place it again widens, and thence on to Basolī the space may be described as a plain or a vale, being low

ground bounded by the ridges north and south of it, itself cut across by the valleys of many torrents that come from the northern mountains. The width of these cross-valleys is sometimes a mile, and sometimes only a hundred or two yards; the sides of them are rocky banks, one or two hundred feet high, at the summit of which is the flat of the dūn.

The inner or northern boundary of this Dansāl and Basolī dūn consists, in the eastern part, of the spurs of a considerable range of mountains which belong to our next tract, and which here end off the region of the Outer Hills; but from about opposite Rāmkot for five-and-twenty or thirty miles to the north-west, intervenes another range of hills and another valley, which make a space that must be classed with what we have been describing. The range goes by the name, along a part of its length at all events, of Karāī Thār, the latter word of which is the equivalent of "ridge." It has a steep face, an escarpment, to the south-west, for here the beds are dipping to the north-east. Near Rāmkot its height is 5000 feet, there it curves round and joins on to the higher mountains; in the direction of Dansāl 3500 or 3000 feet is the common height of it. This range, too, is traversed by the Tavī in a gorge; one of the main roads to Kashmir crosses it near Dansāl by a very steep ascent; a few miles north-west of that it dies away. Nowhere is it a simple ridge; when one has crossed the main line and descended, other smaller rocky ridges have to be passed.

When quite clear of this Karāī Thār we come into the succeeding valley, which is another dūn, that on which the town of Ūdampūr stands. It is a space some sixteen miles long and five wide; it is a flat cut through in broad valleys which lie at a level of about 150 feet below it; so much has been cut away by these and by their smaller branch ravines that the extent of the higher flat is not greater than that of the bottoms, so that the whole space may be described, perhaps with equal truth, either as a flat much cut down into wide hollows, or as a low vale with wide flat-topped hills jutting into it from the mountains.

This dūn narrows up on the north-west towards the lofty hill called Devī Thār; it is bounded along its north-eastern side

by spurs from the mountainous country; on the south-east it is enclosed by the curving round of Karāī Thār, and the junction of that with the same range of mountains, which here definitely brings to an end this outer tract of hills.

WESTERN DIVISION OF THE OUTER HILLS.

The Chīnāb, which we saw to debouch into the plain country near Akhnūr, had before doing so passed for a distance of 20 miles, from Riāsī to Akhnūr, through the Outer Hill region. Along this 20 miles its banks are in places low, or, may be, cliffs of no more than 100 to 200 feet in height; this is where the river cuts across one of the flat longitudinal valleys. In other parts, opposite the ridges, the river is bounded by high irregular rocks, which is the range seen in section, not indeed at the full height of it as it is away from the river, for the hills seem to lower as they approach it, from both sides, before ending in the river-cliff, but still having an elevation of some hundreds of feet.

Away from the Chīnāb we see that the plain country, which we followed in its extent to the Jhelam River, is bounded on the north by hills of the same character as those on the Jummoo side of the Chīnāb. Especially for the first 20 miles west from that river do the ranges correspond fairly closely with those enumerated on the eastern side.

But it should here be noticed that the run of the hills has changed; an examination of the map will show that east of the Jummoo the lines of hill trend in a direction varying from W.N.W. to N.W., while past that place the run becomes more northerly, and of the outermost range is due north; at the Chīnāb River the other change occurs; just beyond it the ridges have a direction of some 20° south of west, which they hold for many miles, till, gradually curving round, the inner ones, at all events, regain their north-westerly direction.

I have gained a view, from the first summit of the high mountains, a ridge nearly 7000 feet high, called Dragarī Thār, behind Paunī, that showed all this Outer Hill region—the parallel ridges,

the intervening flats, the curving of the ranges as their direction followed the changing strike of the rocks which constitute them—plainly as in a map; for a length of a hundred miles each separate ridge can be traced from this commanding spot.

To return to the part behind Akhnūr. The outermost range is of pebbly jungle-covered hills sloping easily to the plains, but showing a steep fall inwards; this escarpment is one of perhaps 300 feet; it is succeeded at its foot by a plateau much cut through by ravines, so much so that the eye does not at once distinguish that the summits are indeed so far flat and so much at one level as to justify the name of table-land; its level must be quite 2000 feet above the sea; a good portion of it is of bare rock, the rest is covered with brushwood and has pine trees scattered; only here and there are bits of tilled land by which a small population is supported; the ravines cut through it to a depth of some hundreds of feet, making steep cliffs of sandstone rock.

Farther to the north the rock rises up from this plateau along a great length of miles with a slope of from 10° to 20°, coinciding with the dip of the beds, regularly for 1000 or 1200 feet, till a level of more than 3000 feet above the sea is reached; thus a bold narrow ridge is formed which continues regularly for many miles with but small indentations; the surface is in great part rocky, but still bears many trees of the long-leafed pine. The ridge is sharp and narrow; the farther slope is yet steeper than that rocky one; it is an escarpment properly and geologically so called, and a really fine instance of one; for 20 miles without a break it continues with a face of 1000 feet of vertical height, at a slope of in some parts 45°, in some rather less, everywhere marked by variations according to the alternate outcrop of beds of sandstone and of clay.

The name of this ridge is Kālī Thār, or Black Range, a name given on account of the dark hue it has in some states of the atmosphere when seen from a distance.

As we look from the summit of this towards the interior, we can learn about the character of the ground in the remainder of the breadth of the Outer Hills.

We see first, that at the foot of this escarpment stretches a flat valley one or two miles wide; this is one of the dūns, and probably it corresponds with that of Dansāl, on the other side of the Chīnāb.* This valley, though it may be called in a general way, and as compared with the ridges that bound it, a flat, is broken by lines of sandstone rock that project up; still a good part of it is cultivated in terraced fields; again, it is cut into, for the greater part of its length, by a great gully, narrow, 200 feet deep, that carries off the drainage to the Chīnāb River; farther west, however, the direction of the drainage alters, and the streams flow into the Mināwar Tavī.

Still looking from our escarpment-summit, we see that beyond the valley lie numerous low lines of hill, an alternation of narrow ridges and hollows, whose surface is mostly covered with brushwood; these occupy some miles of width; behind them rise the bolder slopes of the higher mountains in rich dark colours, intermingled brown and green, backed by the distant snowy peaks.

West of the Mināwar Tavī, the ridges, plateaus, and hollows do not continue to correspond with those we have traced out; new ridges appear in the line of the valleys; others disappear; others coalesce. In fact, a new series of ranges has arisen, generally resembling those we have been looking at, but not individually representing them. By Bhimbar, what may be the continuation of Kālī Thār approaches nearer to the plains. Beyond, from the neighbourhood of that place and of Naushahra north-westward, extend several bold lines of hill, parallel ridges, with narrow hollows between them, themselves broken by lines of rock. These ranges are commonly 3000 feet high, parts of them rise several hundred feet above that, and so continue for a good distance; the highest point marked by the G. T. Survey is as much as 4391 feet.

While from the neighbourhood of Bhimbar such hills as these run with a regular direction to the north-west as far as our boundary

* On the supposition of this correspondence, the two spaces of the plateau and the Kālī Thār ridge together represent the much-broken ground and the successive ridges that we saw to intervene between the first range by Jummoo and the Dansāl dūn itself.

the Jhelam, there exists more directly to the west of it a wide spread of lower hills which no doubt are geologically the equivalents of our first outermost range, which had lately, as we came west, become almost combined with the others, but now again has separated from them, and composes this broad tract, of which some detail must be given. From the plain by the left bank of the Jhelam, bare hills rise on the north somewhat quickly, to a not lofty ridge, of which the highest point is about 800 feet above the flat; the top of the rise is the steepest part; it is an escarpment facing south, composed of beds of clay, sand, and pebbles. From this main ridge, which runs east and west, there jut out to the south very narrow spurs, quite sharp ridges, separated by gullies; on the north of it the ground slopes with an incline at first of 4° or 5°, and afterwards with a much lower one, down to the town of Mīrpūr, the dip of the beds about coinciding with this slope. Near the top, all the soil is of pebbles; lower down, the sloping plateau is of sandy loam; this, too, is cut through by steep-sided ravines. Then, in one direction, this broken ground abuts against the more marked ridges of sandstone hills before mentioned, and in the other falls gradually to the valley of the Pūnch River.

The variation of this tract from the general run and character of the hills near is due to some bendings of the strata in a direction different from that of the main disturbances.

The Pūnch River just named is a tributary of the Jhelam; it drains a large area of mountain country, collecting a number of streams that rise in the lofty Panjāl Range; indeed it combines all those which spring from that part of the Range north or north-west of the branching off of the Ratan ridge. It drains also a considerable area occupied by the mountains of intermediate height, and no small space of the lower, outer, hills. Thus increasing in volume, it flows past the towns of Pūnch, Kotlī, and Chaumuk, and falls into the Jhelam in that part of the country we were describing and now return to.

North of Chaumuk, there is first a partial repetition of the characters of the ground by Mīrpūr; there is comparatively low ground, and a line of pebble hills. Here the dip is south, Chaumuk

being in a synclinal, or perhaps a basin. Then, a few miles farther north, we come into irregular ground, made by low parallel ridges of sandstone; line succeeds line gradually rising in height, and so we find ourselves again among the marked ridges, the continuation of those before pointed out as extending to the north-west.

The lower hills lately passed had such trees as those of the Jummoo jungle—the acacias and others, with the undergrowth of brenkar shrub; on the higher ridges is forest of long-leafed pine.

So varied in form is all this ground that it is difficult to do more towards its description than this without going into such detail as could hardly be followed or remembered. I must be content to say that, up to a line running north-west through Kotlī, we find those characters which have more than once been described; there are ridges composed of sandstone rock, sometimes gently sloping on one side and steep on the other, sometimes steep on both and sharp; some of these ridges continue for a distance, others quickly change or combine; between them are hollows, sometimes narrow, sometimes wider flats; lines of rock spring up, so to say, in the line of the valleys, and, increasing as one follows them, become in turn important hills; gullies or ravines that at this present time effect the drainage of the ground, the latest made set of hollows, now cross the lines of rock, now run parallel to them, at times but little below the general surface, at others cutting below it to a depth of a hundred or two feet.

As we approach the Jhelam, we find more sudden falls of the streams and steeper slopes of the hills, the comparatively low level of that line of drainage having induced a greater denuding power in the streams near.

All this makes a country curiously varying in its detail and almost bewildering, until the eye gets somewhat accustomed to its characters, and enables the mind to refer them to the causes that originated them—causes which cannot be here dilated on, but in a few words may be spoken of as sub-aerial denudation, acting on strata that have a generally persistent strike but an ever-varying dip, strata of different hardnesses, and in respect of that quality, subject to local changes.

The Jhelam River, as it passes this tract, flows often between steep rocky banks several hundred feet high; anon it reaches a spot where a ravine coming down makes its margin accessible; again for a time more gradual slopes, or smaller cliffs that edge some plateau, form its banks; still again it comes between high cliffs, and in deep curves finds its way round lofty promontories, such nearly isolated spots being often fort-crowned, as where Rāmkot and Mangla stand; then, at last, it debouches into the plain, where it is bounded by low banks, and finds room to spread and divide, to form islands with its ever-varying channels, and otherwise disport itself as a river delights to that has escaped from the mountains that restrained it.

CLIMATE AND VEGETATION.

It was necessary, in order to give a connected view of the form of all this tract of country, to confine one's description to that subject, and not linger by the way to tell of other things. Little has been said about the climate or the vegetation; but now, although I am not in a position to give much information about them, a few remarks applicable to the Outer Hills generally may be useful.

For climate the year may be divided, as in the plains of India, into three seasons; here they thus extend:—the hot weather, from April to June; the rains, from July to September; the cold weather, from October to March. Taking the more inhabited portions of the tract, of which the altitude may be from 1200 to 2000 feet, we find that in May and June they experience a severe heat; the rocky surface of the ground becomes intensely heated, and gives rise to hot winds, which blow sometimes with regularity, sometimes in gusts. At night the temperature falls to a greater extent than it does at the same season in the plain of the Panjāb; for the rocky surface loses its heat again, and the irregularities of form produce currents which tend to mix the heated air with the cooler upper strata.

The rains, beginning first among the higher mountains, spread down to the outer ranges in the latter half of June, and, though

often breaking off, seldom cease for the season without affording moisture enough for the bringing on of the summer crops.

The rains ending with September, the country is left dry for a time; its uneven form prevents the soil from retaining much moisture; by the drying of the country, and the decline of the sun's power, the cold weather is introduced. This is a delightful season—a pleasant bright sun and a cool bracing air make it one refreshing and invigorating after the dry heat of the first part of summer, and the warm moisture of the latter months. This bright cold weather is, however, varied by rainy days, which bring rather a raw cold; showers may be expected about the 20th of December, or between that date and Christmas time; and on the higher ridges, at 3000 and 4000 feet, snow falls, melting almost as soon as it falls. It is this winter rain that enables the peasant to proceed with the sowings for the spring crop, and on the occasional recurrence of such showers during the next three months he depends for that harvest which the increasing warmth of the months of March and April is sure to bring on well if the rain has been fairly plentiful.

The only part of the year at all unhealthy is the latter half of the rains; the natives date the beginning of it from the flowering of the rice; it may be said to extend through part of August, September, and part of October; during that time intermittent fever much prevails. The type of fever is somewhat worse than what abounds at the same season in the Panjāb; it is more of a jungle-fever, less regular in its times, and less easy to get rid of. In some years fever is exceedingly prevalent over the whole of this tract. I have heard that Ranjīt Singh's father once took advantage of the inhabitants of the lower ranges being striken down with it to make a raid on Jummoo.

The vegetation of the Outer Hills is for the most part of the dry-tropical character.

The very outermost ridge, as before said, is covered with a more or less dense forest of small-leafed acacias (*A. Arabica* and *A. modesta*, called by the people *Kikar* and *Phulāī* respectively), with some of the *Ber* tree (Zizyphus jujuba) intermingled, and an

undergrowth of the shrub *Brenkar*. This forest, which on the hills occupies a dry pebbly soil, sometimes spreads down on to the loamy ground of the plains; probably in former times it grew over a larger area of the plain, and has since been gradually cleared; the greatest space of flat ground now occupied by it is close below Jummoo, the forest having there been preserved by command.

Farther within the hills there is not such a growth as to make a forest; it is rather a straggling bushy scrub, partly of the same trees in a shrubby form, with Euphorbia (*E. Royleana*, or *pentagona*), which grows to a large size, and occasionally mango, pīpal, banyān, bamboo, and palm (*Phœnix sylvestris*). The streams that flow in the narrow ravines among the sandstone hills have their edges adorned with oleander bushes.

The long-leafed pine (*Pinus longifolia*, whose native names are *chīl* and *chīr**), a tree whose needle-foliage is of a light bright green colour, is usually first found, as one goes inwards, on the north slope of the outermost ridge. I have found it there at the level of 1400 feet, but only in a stunted form. On the broken plateaus and dry hill-sides of 2000 feet elevation one sees fair-sized trees of it scattered about; at 3000 and 4000 feet, in favourable spots, one finds whole woods of it, but even these are not so thick and close as the forests of *Pinus excelsa*, which cover the higher hills. The highest range of *Pinus longifolia* seems to be 5500 feet, or it may be a little more.

Of cultivated plants we have in these lower hills nearly the same kinds as in the Panjāb, and over the whole area the same succession of two crops in the year. The winter crop, chiefly wheat and barley, is sown in December (sometimes earlier, and sometimes even later), and ripens in April; the summer crop of maize, millet, and rice, is sown in June and ripens in September or October. At one or two places (as at Syālsūī, near Rājāorī) rice is raised by rain-moisture alone, but most generally it depends on irrigation. Plantain and sugar-cane, though not largely cultivated, grow fairly well, they have even been introduced into Pūnch, which is 3300 feet above the sea.

* With the cerebral *r*.

CHAPTER III.

INHABITANTS OF THE OUTER HILLS.

THE DOGRĀS — DOGRĀ BRAHMANS — DOGRĀ RĀJPŪTS — RĀJPŪT SUBDIVISIONS — RĀJPŪT CUSTOMS — OTHER CASTES OF DOGRĀS — THE CHIBHĀLĪS.

THE Race Map shows the Outer Hill tract to be divided between two races, the Dogrās and the Chibhālīs; the Faith Map shows a coincident line of division crossing the same country and separating Hindūs and Muhammadans. In truth, it is chiefly the fact of the people in the western part having become Muhammadan that causes a difference in the population, for the two divisions are of one origin, not far removed. Before the introduction of the new faith they were doubtless in part identical; but now the religious and social separation has caused differences, national differences, to spring up which justify the distinction here made.

THE DOGRĀS.

The Dogrās are of the great Aryan race that settled in and has become the main population of India; those of that race who spread into the mountains, or, rather, who settled in the lower hills and went not into regions where snow falls, acquired, in the long course of centuries, characters that distinguish them from the inhabitants of the plains on the one hand, and of the higher mountains on the other.

The settlers in the hills that edge the Panjāb, at all events those of them who have retained their Hindū faith, bear, as before said, the name Dogrā, while the country they inhabit is called Dūgar. The origin of the name is this. Near Jummoo are two holy lakes, Saroīn Sar and Mān Sar, which will in course be described; from these the country round was called in Sanskrit

Dvigartdesh, or the "country of the two hollows"; from this came *Dūgar*, and from that *Dogrā*.

The Dogrās are divided into castes in the same way, though with some local variation, as are the Hindūs of India generally; these are partly the remnant of race-distinctions, and partly the outcome of occupations become hereditary. The following list gives the names of some of the castes in the order of their estimation among themselves:—

Brahman.
Rājpūt; *divided into* {Miāns. / Working Rājpūts.}
Khatrī.
Thakar.
Jat.
{Banyā *and* Krār (small shopkeepers).
Nāī (barbers).
Jiūr (carriers).}

* * * *

Dhiyār, Megh, and Dūm.

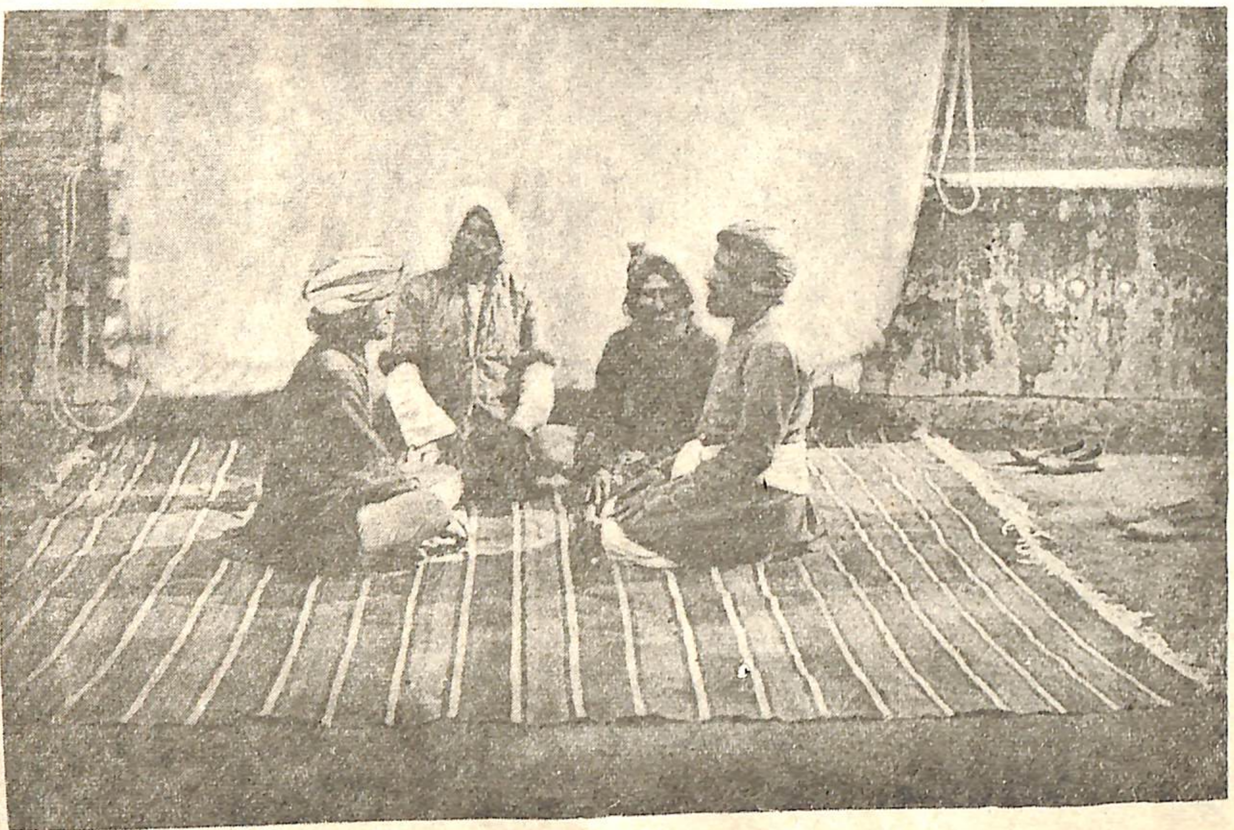
Something will now be said of most of these castes in succession, from the highest onwards.

DOGRĀ BRAHMANS.

The highest is of course the Brahman caste; to them, here, as in other parts of India, is traditionally due from all other Hindūs a spiritual subjection, and to those of them who are learned in the holy books it is actually given.

In these later times, that is, for the last ten centuries and more, Brahmans have taken to other occupations besides that of continual devotion. We find them in the Outer Hills numerous as cultivators; and in one part, in those villages north and north-west of Akhnūr, on the south of Kālī Thār, they form the majority of the inhabitants.

In physique the Brahmans do not much differ from the next caste, who are to be spoken of with more minuteness. The Brahmans are considered by the others to be in character deep, clever to scheme, and close in concealing.



GROUP OF DOGRĀS

DOGRĀ RĀJPŪTS.

The caste next in standing is the Rājpūt. The Rājpūts are here in considerable numbers. They hold and have held for many centuries the temporal power; that is to say, the rulers of the country are of them.

The Dogrā Rājpūts are not large men; they are distinctly less in size than Englishmen; I should take their average height to be 5 feet 4 inches or 5 feet 5 inches, and even exceptionally they are seldom tall. They are slim in make, have somewhat high shoulders, and legs not well formed but curiously bowed, with turn-in toes. They have not great muscular power, but they are active and untiring.

Their complexion is of a comparatively light shade of brown, rather darker than the almond-husk, which may be taken to represent the colour of the women, who, being less exposed, have acquired that lighter tint, which is counted as the very complexion of beauty; the hue indeed is not unpleasing, but it is generally deep enough to mask any ruddy changing colour of the face.

The men have an intelligent face, small features, generally well-formed, a slightly hooked nose, a well-shaped mouth, dark brown eyes. Their hair and beard are jet black; the hair is cut to form a curly fringe below the pagrī or turban; the mustache is usually turned up eyewards.

Thus the Dogrā, and especially the Rājpūt, is often decidedly good-looking. Of the group of four men represented, from a photograph, sitting in the ordinary fashion, the three with buttoned-up sepoy coats are fair specimens of Dogrās; the fourth is a man of the next race, a Chibhālī.

In character the Rājpūts are simple and childlike; but this is not true of those who have come much into contact with the Jummoo Court. If taken in the right way they are tractable, else they resent interference, and usually, if once fixed to a certain line of conduct, they are obstinate enough in it. They stick

closely to the prejudices they were brought up in, and are very particular to observe their caste regulations; these characteristics are common to the Brahmans and Rājpūts both.

In money-matters many of the Rājpūts, and, indeed, the Dogrās generally, are avaricious, and all are close-fisted, not having the heart to spend, even on themselves. This character is recognized as belonging to these hill people by the Panjābīs, who in their turn do not spend with half the freedom of the people of Hindostān proper and the country below.

The Rājpūts, particularly that class of them called Miāns, who will be distinguished farther on, have a great notion of the superiority of their own caste, engendered by their having been for so long the ruling class in these hills. And individual conceit is common with them as well as this pride. It is frequently remarked that when a Miān gets up in the world a bit he holds his head high and thinks himself ever so far above his former equals. They are indeed apt to be spoiled by advancement, and to some extent the Miān Rājpūts have already been so spoiled. This is by their rule having become extended over such a width, and so many races having come under it. Maharaja Gulāb Singh was of this caste, and the extension of his power led to the advancement of his caste-brethren, who were and are in great part the instruments of the acquisition and of the government of the dependencies of Jummoo.

Judged of in this capacity—that of agents and instruments of government—we must allow to the Dogrās considerable failings. They have little tact; they have not the art of conciliating the governed, of treating them in such a way as to attach them. Those who are high in authority have not width enough of view to see that the interests of both governors and governed may be in a great measure coincident. As a rule, they are not liked by the dependent nations even to that degree in which, with moderately good management, a ruling race may fairly hope to be liked by its alien subjects.

Still we must admit that the Dogrās show, by their holding such a wide and difficult territory as they do, some good qualities. Seeing how in far-away countries, often in a cold climate thoroughly

unsuited to them, sometimes in small bands surrounded by a population that looks on them with no friendly eye, they hold their own and support the rule of the Maharaja, we must credit them with much patience and some courage.

Some power, too, they have of physical endurance; they can endure hunger and heat, and exertion as far as light marching on long journeys is concerned; but heavy labour or extreme cold will knock them up. Faithfulness to the master they serve is another of their virtues.

Rājpūt Subdivisions.

The Rājpūt race or caste has many subdivisions, most of which have sprung up by the localization of families and their connection with the rulers of the various small principalities into which these hills were formerly divided. Thus we have Jamwāl, Balauriā, Jasrotiā, &c., as the names of those attached to, or possibly remotely connected by blood with, the ruling families of Jummoo, Balāwar, or Jasrota. We cannot go into the detail of these smaller tribes or clans, but one interesting and important division must be described.

All over Northern India the Rājpūt is traditionally the ruling and fighting caste, that from which both the kings and warriors were in old times taken. In these hills, where social changes come slower than in the plains, this still holds. The late rulers, of the time when there was a separate rajaship for every ten or twenty miles, and the present one, whose father absorbed the smaller states into his principality of Jummoo, were or are all Rājpūts, and great numbers of people of that caste find a place either about the Court or in the army.

It was, possibly, at one time the custom throughout India for people of the Rājpūt caste to follow no other occupation than service such as this. Here, at all events, a considerable section of the Rājpūts hold aloof from every other mode of getting a living. But some have at different times fallen off from the old rule of life and taken to other ways. By this circumstance the Rājpūts of these hills are divided into two classes; the men

of the first class are called *Miāns*,* while those of the second we will, in default of a general name, speak of as Working Rājpūts.

The Miāns follow no trade, nor will they turn their hands to agriculture. For a Miān to put his hand to the plough would be a disgrace. Most of them have a bit of land, either free or nearly free of land-tax, which they get others to cultivate on terms of a division of the produce. Their dwellings are generally isolated, either at the edge of or within the forest or waste; they are so placed for the sake of hunting, which is their natural and favourite pursuit.

But their profession, that to which they all look for a livelihood, is, as they say, "service"; by this they mean the service of their chief or of some other ruler, either military service, or for attendance not involving menial work or anything that can be called labour. They make good soldiers; they are faithful to the master who employs them, and they have a tendency to be brave. The sword is their favourite weapon, and they are handy in the use of it, while those of them who have had the practice of sport are good shots with a matchlock.

The Dogrā contingent of the Sikh army, which must have been composed in great part of these Rājpūts, did well in Ranjīt Singh's time, and I doubt not that the same class, if properly led, would do good service again. But it is in the art of leading that the Miāns fail; they seldom have those qualities which are necessary for the making of a good superior officer. Warmth of temper, quickness of action, and absence of tact, rather than steadfastness and power of combination and of conciliation, are their characteristics.

The *Working Rājpūts* are those whose families have, at various periods, taken to agriculture, and so have become separated from their former fellow class-men, and come down one step of caste. They are no longer admitted to an equality with the Miāns, though

* *Miān* (pronounced with a nasal *n*) is a Hindī word, meaning "master," and used as a respectful term of address. In different parts of India it has come to be applied to different classes; in the Panjāb, for instance, about Lāhor certainly, it is the usual title given to Muhammadans; in these hills it is applied only in the sense stated.

still held by them in some respect. As agriculturalists they do not succeed so well as the older cultivating castes.

Many of the Working Rājpūts follow arms as a profession, and are to be found side by side with the more exclusively military Miāns.

At this present time some few families of Miāns begin to take to the plough, but not many; for the old system is recognised by the Maharaja and so far encouraged by him that, other things being equal, a Miān is most likely to get advancement in the Government service. It would be quite within the power of the Maharaja, as head of the caste in this neighbourhood, by gentle influence and without anything like pressure, to break down the restriction and get all, or nearly all, of the rising generation of Miāns (so far as their circumstances fitted) to adopt the more open rules as to occupation of their working brethren.

RĀJPŪT CUSTOMS.

Till of late years, it was an almost universal custom among the Miāns to destroy every female infant born to them; the custom was not peculiar to this caste or country; in other parts of India it was, and even is to some extent, practised by certain classes; by the Miāns, however, it was, probably, as thoroughly carried out as by any.

As soon as the girl-child was born it was taken from its mother, and either buried alive, or, more rarely, exposed in the forest. I have heard of some babies having been rescued from this last state by passers-by, and taken into their families and brought up by them.

The history and original cause of this custom of female infanticide it is not easy to trace. Of late, at all events, the practice has been supported on a feeling of dislike to seeing a daughter of the family led away to another's house. An impression of disgrace is attached to this in the minds of people of the Miān caste. Still one cannot be sure that this is not rather a result of the long-continued practice than a cause of it. The expense of marriages

has been given, and, as regards later times, with justness, as one reason for this infanticide being committed. But I do not think that in these hills the custom originated from the desire to avoid expense. Rather I should be inclined to connect it with a feeling that the work of the Rājpūts was essentially man's work as opposed to woman's; that all their issue should be brought up to arms; that girls were out of place in their families.

Not until the British occupation of the Panjāb, and the extension of our influence over the hill country, did female infanticide begin to cease. In the year 1846 much was done by the British representatives persuading the natives of chief rank and influence to agree together to exert that influence among their own people for the end in view, and to lead by the example of their own families. Maharaja Gulāb Singh joined in this movement heartily, and did much towards putting down the practice in his own country. Female infanticide has there almost entirely died out by now.

A necessary sequence of female infanticide, carried out so thoroughly as it was by the Miāns, was that the men of that caste had to take a wife from some other caste; thus arose the custom, that at first seems so contrary to usual Indian caste ways, of the Miāns marrying girls from the castes below them. The classes thus honoured (for they themselves esteem it an honour) are first the Working Rājpūts, and then an agricultural caste called Thakars, who will be mentioned farther on.

A result of this must be that the Miān blood is kept less pure, and their race less isolated, than is the case with the castes below, for with every such connection as we speak of there must be a strain of the other breed introduced, while, on the other hand, the Thakars, not able to receive into their own circle any girl of the higher caste in exchange, intermarry among themselves, and so keep their race distinct. It is probable that the Miāns, as a race, have derived advantage from this bringing in of fresh blood.

When the girl is brought home to the house of the Miān as a bride—a bride may be of six or eight years old—she never

again enters her former home; this regulation of the Miāns evidently was made in order that as little intercourse as possible should be kept with the family with whom they had been obliged, so to say, to become connected.

Now that from the cessation or the great lessening of female infanticide, girls grow up in their homes, the Miāns no longer go to the Thakars for a wife; they have begun to intermarry among themselves; still, as occasion may suit, they take (to use their own idiom) from the Working Rājpūts.

Satī, or the burning of widows, is another of those old Hindū customs that has disappeared from before the presence of the English, and this has absolutely ceased within the country of the Maharaja.

Though not practised in the case of everyone who became a widow, yet it was followed as a general rule by more than one caste, and was, probably, the most strictly carried out by the Miāns. It applied to *all the widows* of the deceased. The following frightful instance occurred on the death of Raja Suchet Singh, brother to Maharaja Gulāb Singh, and uncle to the present Maharaja. Suchet Singh was killed at a place a few miles from Lāhor, in the time of the Sikh troubles; his home was at Rāmnagar, in these hills. I am told, and on good authority, though I would allow something for exaggeration of numbers, that he had ten or eleven wives, and that the number of women in his establishment—attendants and all—was 300. Of these a few who were with him committed satī at the spot near Lāhor where his body was burned. The greater number of them were at Rāmnagar, and there his head was brought for burning; the wives and women who were there, to the number of 150, gave themselves to the flames with it. The sacrifice of the whole number was completed by those absent from Rāmnagar committing satī at the places where they happened to be when the news of their master's death reached them; thus, at Jummoo, ten or fifteen of the women, who were there at that time, were burned on the pile.

Of another such case I have been told by an eye-witness. When Raja Hīra Singh, the son of Raja Dhiyān Singh, was killed,

his widows committed this suicide at a place called Parmandal, near Jummoo. There was a large square stage made, built up of fagots with a rough roof raised over it; between the fagots *ghī*, that is, clarified butter, was placed, to increase the violence of the flames; the women, twenty-two in number, were seated on the platform; the wood was fired, and the burning was finished without a scream or a voice being heard from them.

But not always did the widow give herself up willingly to the fate prepared for her by that stern master, social custom. At times the love of life would be too strong, and the victim would make an effort to save herself. I was told by an eye-witness of such a thing, that happened at a village two or three miles above Akhnūr; a quite young widow was brought to her husband's funeral-pile, and, according to the custom, she was seated on it with her husband's head in her lap; but when the flames reached and began to lick round her, she was unable to endure it, and rushed out to escape from them. This was a thing that seldom happened, and the disgrace of it was not to be tolerated now; the people round—mostly her husband's relatives and her own—drew their swords, cut her down, and, heaping abuse on her, forced the poor girl back on to the fire, and completed the ceremony.

These customs, of infanticide and satī, have, as before said, been thoroughly broken, and the latter has been entirely abolished. But it is curious to see how pertinaciously the Hindūs here (and the Miān Rājpūts as much as any and more than many) keep to their caste customs as regards eating. A curious case came under my notice, the relation of which will well illustrate this. Two girls of quite low caste—of one of those tribes whom to touch is pollution for a Hindū—were left orphans at the age of eight and twelve years. Two men of good caste obtained possession of the girls by satisfying the claim of a creditor of their father's, and determined to turn them to good account. So they brought them to a village where nothing was known of the girls, and represented them to be Thakarnīs, that is, to belong to the caste of the Thakars, which the Working Rājpūts can marry into. They then offered them in marriage to one of these for his two sons, and in return the men

were to receive 400 rupees. At the father's request they themselves sat down and ate with the girls, by way of convincing him that all was fair and above-board. After this they received and got away with the money, and the marriage took place.

In a month or two the truth came out; the girls being questioned as to what they had used to do at home, said they used to attend to the furnaces (for iron-smelting in these hills is carried on by a low, though not the very lowest, caste), and they acknowledged that Thakars did not eat from their hands. Great dismay spread through the village on this discovery; not only had the caste of all the people of that house been broken, but also the caste of all those who since the wedding had eaten or drunk with them.

Representation being made to the Maharaja, the matter was referred to Pandits, and their report was endorsed by him. It was to this effect: The two young men who had been married to the outcasts (the marriage was, of course, void) were to go to the Ganges, and the other people of the house to Parmandal, a holy place near Jummoo, to wash; and all were to expiate their uncleanness by fasting from eating for twelve days, or from eating and drinking for four days; a similar but less severe course was prescribed for those who had come into the unclean house and eaten there; the people who through these last had had intercourse at second hand (a large proportion of the inhabitants) were to go to Parmandal and wash, and for one day fast; each and all to begin with a purge.

I heard thus much of the carrying out of the Pandits' decision: the two who had married had started for Harīdwār on the Ganges; the other people of the house went to Parmandal and fasted for a considerable portion of the time marked out; then, their lives being in danger, the Brahmans allowed them to drink milk for the remaining days, and so they became clean again. The two impostors had not been caught; imprisonment for life would not be considered too severe a punishment for them.

While on Hindū customs, I will mention one or two more that strike the attention of a stranger.

When a man or woman dies at a good old age, the funeral ceremonies are accompanied, not with signs of mourning, but of rejoicing. They say it should not be as for one who was cut off from this life untimely, that when one dies whose race was run, who had lived his life, one should rather rejoice at the completeness of it than mourn. I have often seen the procession to the burning of such a one. All gaily dressed, went along with cheerful music and cries of rejoicing, while sweetmeats or money were scattered among the bystanders as at a wedding. Still among the relations of the dead real grief would find expression in spite of the efforts which on principle they made to hide it.

When a mother dies (and I think it is the same when a father dies), the sons shave their beards. When, in the year 1865, the Mahārānī, the Maharaja's wife, died, the theory of a paternal government was so far extended as for the above rule to apply to all the Hindū subjects, with a few certain exceptions. Barring Sikhs (for whom to shave would be an abomination) and Brahmans, whose superiority of caste required an exemption, every man of the Hindūs had to make a clean shave. It may be imagined that it took some months for the country to recover from the effect of that ordinance.

OTHER CASTES OF DOGRĀS.

To return now to our account of the various inhabitants of Dūgar.

After the Brahmans and Rājpūts, come the *Khatrīs.* The Khatrīs, both in these hills and in the Panjāb, are the higher class of traders, and also commonly the munshīs, or writers. They are generally less good-looking than the Rājpūts, and are less inured to physical exertion; but they are much keener, and are men of better judgment and greater power of mind. From their being thus better fitted for responsible posts, and from their wielding the power of the pen, which, in the quietness of times that has come upon this country, is a more important instrument than the sword that formerly prevailed over the other, they have come

to supplant, to some extent, the Rājpūts or Miāns in place and power.

Next come the *Thakars*, who are the chief cultivating caste in the hills. I do not know with what class in the plains of India one should correlate them. In occupation they correspond to the Jats in the Panjāb (of whom there are a few in the hills also), but the two are not related; the Thakars are counted higher in rank. Their name of Thakar is undoubtedly the same word that in lower India is used for the Rājpūts, though it has the first *a* short instead of long. But I do not venture to say that they are in any way related; at present, the only connection between them is that above described—the one-sided custom by which the Thakars' daughters were given in marriage to the Rājpūts without any of that caste entering into the community of the Thakars. They are a well-looking and well-made race of men, a good deal like the Rājpūts, but of larger frame; they are more powerful in body but less quick in motion, and they have not an equal reputation for courage.

Next below in estimation come some castes whom I have bracketed together; their occupations are various, but in rank they are nearly equal. These are Banyā, Krār, Nāī, and Jīūr, with some others. They include the lower class of traders of different kinds, shopkeepers for the most part small and pettifogging; they include the barbers and others whose business it is to minister to the wants of those above them, especially the carriers, called *kahārs* in the plains, but here called jīūrs, whose occupations are the carriage of loads on the shoulder, including the palankin, and the management of the flour-mills worked by water.

Last come those whom we Englishmen generally call "low-caste Hindūs," but who in the mouth of a Hindū would never bear that name; they are not recognised as Hindūs at all; they are not allowed even a low place among them. The names of these castes are *Megh* and *Dūm*, and to these must, I think, be added one called *Dhīyār*, whose occupation is iron-smelting, and who seem to be classed generally with those others.

These tribes are the descendants of the earlier, the pre-Aryan,

inhabitants of the hills, who became, on the occupation of the country by the Hindūs, by the Aryans, enslaved to them; they were not necessarily slaves to one person, but were kept to do the low and dirty work for the community. And that is still their position; they are the scavengers of the towns and villages.* Of Dūms and Meghs there is a large number at Jummoo, and they are scattered also over all the country, both of the Outer Hills and the next higher mountains. They get a scanty living by such employments as brickmaking and charcoal-burning, and by sweeping. They are liable to be called on at any time by the authorities for work that no others will put their hand to.

A result of this class of labour being done only by them is that they are reckoned utterly unclean; anything they touch is polluted; no Hindū would dream of drinking water from a vessel they had carried, even if they had brought it suspended at the end of a pole; they are never allowed to come on to the carpet on which others are sitting; if by some chance they have to deliver a paper, the Hindū makes them throw it on the ground, and from there he will himself pick it up: he will not take it from their hands.

The Meghs and Dūms have physical characters that distinguish them from the other castes. They are commonly darker in colour; while the others of these parts have a moderately light brown complexion, these people are apt to be as dark as the natives of India below Delhi. They are usually, I think, small in limb and rather short in stature; in face they are less bearded than the other castes, and their countenance is of a much lower type than that of the Dogrās generally, though one sees exceptions, due no doubt to an admixture of blood; for, curiously, the separation of them from the ordinary daily life of the others does not prevent an occasional intercourse that tends in some degree to assimilate the races.

The Meghs seem to hold a position as regards the Dūms somewhat like that of the Brahmans among Hindūs: they are not

* I do not think the Dhīyārs have this low employment though they seem to be ethnologically allied to the Meghs and Dūms.

only counted by them as higher, but are looked up to with some such special respect.

The Maharaja has done something to improve the position of these low castes in engaging some hundreds as sepoys, for the work of sapping and mining. These have acquired some consideration, indeed they have behaved themselves in time of war so as to gain respect, having shown themselves in courage to be equal with the higher castes, and in endurance to surpass them.

Thus we see that the great majority of the people of Dūgar are Hindūs, with the remnants of the old inhabitants among them, who cannot be said to be of any faith. Here and there, but especially in the towns, are Muhammadans, following various trades and occupations. In Jummoo, especially, there is a good number of them, partly those who from various places have come and settled there, partly those who, natives of the country, have at different times been converted to Muhammadanism. Of these, in all probability, are the *julāhs*, that is, weavers, who form a large proportion of the Muhammadans of Jummoo, so much so that one ward of the town is called "the weavers' quarter." It may be worth mentioning, as one of the strange facts of the distribution of labour among castes and tribes, that the whole of the weaving trade hereabouts is in their hands; there remains no set of Hindūs who follow that for a business.

Settlements of Kashmīrīs, also Muhammadans, have been made in a few places in the Outer Hills. These people will be described in the chapter on Kashmir.

The Chibhālīs.

They are so called from the name of their country, Chibhāl, which is that part of the Outer Hill region lying between the Chīnāb and Jhelam rivers. It would seem that the word Chibhāl comes from *Chib*, which is the name of one of the Rājpūt tribes. Why that particular tribe should have given its name to the country in question is not clear, but doubtless there is something in its history that could account for it.

It was stated before that these Chibhālīs, Muhammadans now, are in fact of the same race as the Dogrās, who have remained Hindū. Several tribes of these Muhammadans have the same name as certain of the castes in Dūgar. Thus, some of the subdivisions of the Hindū Rājpūts, as Chib, Jarāl, Pāl, &c., exist also among the Muhammadans; and the more general designation of Mussalmān Rājpūt is commonly enough used.

These Muhammadanised Hindūs keep to some of the old caste rules; not, indeed, as to eating, for all Muhammadans will eat together; but in the matter of intermarriage. They will either marry in their own separate caste, or will take a wife from the one below them, and give their daughters to the caste above them.

Besides Rājpūts, there are many Muhammadanised Jats in Chibhāl; the Jat is the prevalent cultivating caste in the Panjāb, but it occurs but rarely in Dūgar. In the eastern part of Chibhāl are Muhammadan Thakars.

Besides these, there are many races among the Chibhālīs whose origin it is not easy to discover. An important and high caste is one called Sudan; it prevails in the part between Pūnch and the Jhelam; it has a position among these Muhammadans nearly like that of the Miāns among the Dogrās. A general name for this and the other high castes of Chibhāl is *Sāhū*.

In the higher part of the Darhāl Valley, to the north-east of Rājāorī, are some people who are called *Maliks*. This is a Muhammadan title given by Akbar. The Maliks were appointed by that king to the charge of the Passes that led into Kashmir. Villages were granted to them to be held by the tenure of this service; they were to defend the Passes, and appear in the field when required with from 100 to 500 men;* the charge became hereditary, and these Maliks of Darhāl, as well as those on the other frontiers of Kashmir, doubtless represent the original officers of Akbar. What race they were of to begin with I cannot tell; these at Darhāl, though in some respects resembling the rest of the Chibhālīs, still have something distinctive in their appearance;

* I have here quoted from Baron von Huegel.

for instance, their beards are long and waving. They give their daughters in marriage to the Jarāls of their neighbourhood; these are Muhammadan Rājpūts, of whom, for the last seven or eight generations, the rulers, the Rajas of Rājāorī, have come.

The Chibhālīs, on the whole, resemble the Dogrās, although the Muhammadan way of cutting the mustache makes a difference that strikes one at first. The Chibhālīs are, I think, stronger, more muscular, than the others, and are quite equally active.

In the extreme north-west of Chibhāl, and beyond it as well, on the borders of Kashmir, are two races somewhat different from the rest, but still near enough to them to be classed under the same general name of Chibhālī. These are the Kakkās and the Bambās; they people the banks of the Jhelam between Gingal and Muzafarābād, and up the lower part of the Kishangangā Valley. The Bambās prevail on the right bank of the Jhelam, and the Kakkās on the left. I know of little difference between the two; their ground is generally spoken of as "Kakkā-Bambā country"; they are stout, strong-built fellows, with a good cast of features, that may be described as intermediate between that of the other Chibhālīs and that of the Kashmīrīs; they have a less pleasant expression than either, for in disposition they are somewhat surly.

Lower down the Jhelam River, west of Kotlī and of Mīrpūr, there is a caste or tribe called *Gakkars;* these, with other high castes, would be classed as "Sāhū." They were people who for long sustained their independence in the hills, even against powerful enemies. They are most numerous, perhaps, on the right bank of the river, in the British territory, where are remains of buildings—palaces and forts—of the time when they had their own Raja. The fort called Rāmkot, on the left bank, was, I was told, built by one Toglū, a Gakkar.

Going back to the eastern part of Chibhāl, we are on the boundary-line of Muhammadans and Hindūs. A hundred years ago, probably, the former were encroaching, and the boundary was gradually coming eastward; but now, certainly, no such advance is being made. The Muhammadans on the border were not, and

are not, very strong in their faith; they retain many Hindū fashions, and some even have an idol in their house. Till quite lately it was their custom to marry Hindū women of the same caste, and these remained Hindū, and did not adopt Muhammadanism. This is no longer done; but when I was in the country some women of that sort were still alive.

The Faith Map shows, within the area of Chibhāl, a few patches of the colour that represents the Sikh religion. Some villages near Muzafarābād are inhabited by Sikhs; they are settlements, two hundred years or so old, of people of that sect from below.

CHAPTER IV.

JUMMOO AND THE COURT.

THE CITY OF JUMMOO — THE DAILY CUSTOM OF THE COURT — SPECIAL DARBĀRS — A HUNT — A ROYAL MARRIAGE.

JUMMOO, the largest town in the Outer Hills, is also the capital. All the countries that compose the Jummoo and Kashmir territories, whether the distant regions of Ladākh, Baltistān, and Gilgit, whether Kashmir itself, or the nearer yet still extensive districts on the south of the lofty mountain ranges, are governed from that city, which is the home and head-quarters of the Maharaja and his Court.

The position of Jummoo, with relation to the whole extent of the dominions, is not one that would have been selected for a capital. Its distance from Kashmir, the most populous part of them, and its still greater distance—amounting to 300 and 400 miles—from the northern and eastern portions, renders it inconvenient, and, for the inhabitants of those farther countries, almost inaccessible. Capitals, however, more usually owe their existence to a growth under, so to say, natural influences than to deliberate choice. Jummoo, as will have been learnt from the introductory chapter, has such an historical connection with all the countries now ruled from it as accounts for its present position. The additions to the original principality of Jummoo having been made in every direction but that of the Panjāb, the capital has at last been left almost at the edge of its large dependencies.

Not only have the fortunes of the Maharaja's house been bound up with Jummoo, but their inclinations, too, have remained towards this their native place; so that, probably, it has never entered the head of either Maharaja to change the seat of govern-

ment, although there is such a country as Kashmir to tempt them.

It is, however, the custom for the Court to go to Sirīnagar, the chief place in Kashmir, sometimes every year, and sometimes less often, for a few months; partly to avoid the heat of the lower land, and partly that the affairs of Kashmir may be looked into more closely, and that the people of the distant countries may have a shorter journey to reach the Court, if business draws them to it.

THE CITY OF JUMMOO.

The city or town of Jummoo is built at the very first rise of the hills out of the plain, on a slightly-sloping plateau 200 to 300 feet above the flat country, and some 1200 feet above the sea. This is part of the outermost ridge of hills; the ridge is here cut through by the valley of the Tavī River, which flows out to the plains at a level more than two hundred feet below the plateau the town is built on, between steep but wooded banks.

Coming to it from the Panjāb, one passes, while still on the plain, through two or three miles of the close forest of acacia trees with bushy underwood; then one comes to the river-bed, an expanse of rounded pebbles, with the stream flowing in the middle —a stream usually shallow and gentle, but which is sometimes so swollen with floods as to rush with violence over the whole wide bed. As one fords this Tavī River, one sees how, in coming from the upper country, it breaks through, so to say, the outermost range; on its right bank the hill on which Jummoo is built, and on its left a corresponding one, crowned by Bāo Fort, form, as it were, a gateway to the inner country.

To reach the town after crossing the stream, we have again to pass through the wood, along a narrow lane, at a turn of which we find ourselves in front of the principal gate, placed at the top of a short but steep ascent.

At this spot travelling on wheels comes to an end; from here onwards carriage is performed by camels, pack-horses, elephants, or coolis. The bullock-carts that up to this point have been the

great means of goods traffic are left here, and their contents are brought into the city mostly on men's backs.

At the gate are stationed a guard, writers whose business it is to report arrivals, and custom-house messengers. After passing this entrance, in doing which we come on to the plateau, we advance on more level ground, along a wide street or bazaar, which gives the promise of a comfortably-built town; but a little farther, and one suddenly becomes lost in a maze of narrow streets and lanes of low single-storied houses and little narrow shops. The way is crowded, and business is brisk, and most of the people have a well-to-do look. A mile or so of this, on a gradual rise, brings us to the centre of interest of the place—an open, irregular square, called the Mandī, or Public Place.

The Mandī is the spot where all the business of the Government is done; it is entirely surrounded by Government buildings. On three sides are public offices, built with considerable taste; their lower stories have a line of arches that suit the native practice of doing business half out of doors. The farther side of the square has a nearly similar building, where the Maharaja holds his ordinary daily Darbār or Court; behind this is seen the more lofty pile of the inner palace.

The area of Jummoo is about a square mile; its population has never been counted; by guess, I should say that it is between 15,000 and 20,000. The town is bounded on two sides by the cliff or steep slope that overhangs the river-bed. Some of the buildings of the Maharaja's Palace are placed at the very edge of the most precipitous part, and they command a view over the flat valley of the river, where it widens above the gorge, over alluvial islands covered with gardens and groves, on to inner lines of hill with a surface of broken cliff and scattered forest, and to higher mountains beyond, which are often snow-covered. The steep slopes close at hand, and those of the opposite hill, are clothed with the same forest that covers the plain through which the town was approached; it gives shelter to a good deal of game, chiefly pig, spotted deer, and nīlgāe, which, from the strictness of the game laws, are found up to the skirts of the city.

Jummoo is not a walled town, though partial defences have at different times been erected. Towards the river the steep bank has been trusted to, though it is by no means inaccessible. On the south a wall runs along the edge of the high land, pierced by the gateway through which the road from the Panjāb enters. On the west and north-west the place is bounded by nothing but the jungle, which, indeed, would be a greater help to the besiegers than to the defenders, as it is thick enough to hide from view, but not to prevent an advance through it.

With the exception of the Palace and the public buildings surrounding the square, there is not much that is architecturally attractive. Nearly all the city, as before said, is of single-storied houses, which one quite overtops in going through the streets on an elephant. But there rise up among them a few large houses, what may be called mansions, which have been built by some of the Court people, or of the richer merchants of the place; the house of the family of the chief ministers, Dīwān Jawāla Sahai, and his son Dīwān Kirpā Rām, especially, is a large pile of buildings. Then at one edge of the town, in a picturesque position overlooking the river valley, are a few houses built after the fashion of those that Englishmen live in in India; these the Maharaja has erected for the accommodation of European travellers, whether stray visitors or guests of his own, who now and then reach Jummoo.

The convex-curved spires of the Hindū temples are conspicuous objects; the principal one, in the lower part of the town, is a plain but fine, well-proportioned building; and in the same quadrangle with it is a smaller, gilt-domed temple, built in memory of Maharaja Gulāb Singh. New temples arise; of late years several have been built; one of these has been erected by the chief minister. As one approaches Jummoo through the plain, its tall spire and gilt pinnacles catch the eye from afar.

Jummoo, though it is a good deal resorted to for trade and other business, is not usually liked by natives as a place to live in. The comfort of a native of India depends very much on the accessibility of good water, and here one is obliged either to use

the water of the tanks, not really fit for drinking, or to fetch the river water from below. Fuel, too, is dear, from the strict preservation of the forest. For anyone at all used to active habits, the confinement attendant on the situation of Jummoo prevents it from being considered at all a pleasant place; the paths and roads are of the round stones of all sizes that make up the mass of the hill, and for two or three miles one cannot get clear of them, nor of the thick forest. The only redeeming point is the beauty of the prospect. We have seen how, from the edge of the cliff, a wide view opens of the nearer ridges of the Himalayas, with peeps of the more lofty mountains behind. From other points we can look south and west over the plain of the Panjāb, and from our elevation can command a great and beautiful expanse of it. Near at hand are rounded masses of the green foliage of the forest; beyond is more open ground, with villages scattered, and the waters of the Tavī, in its various channels, shining between; in the distance the hues change to grey and purple, but the land ends off with the sharp line made by the earth's curvature, distinct as the horizon at sea.

THE DAILY CUSTOM OF THE COURT.

It is when the Maharaja is sitting in public Darbār, holding open Court for the hearing of petitions, that the Mandī has its liveliest appearance. For the morning Darbār he will take his seat, at nine or ten o'clock, beneath one of the arches of the arcade, on the cushion which here answers for the throne, accompanied by his eldest son, and surrounded by his ministers, and with, may be, from fifty to a hundred other courtiers and attendants seated round against the wall, at distances according to their degree.

For some months of the cold weather of several successive years, I was myself a daily attendant at these Darbārs, which are, indeed, the occasion for all of a certain standing at Court to pay their respects to the Maharaja—to "put in an appearance," to *be present*, as the Indian idiom has it—whether other business requires them to come or not.

Each and all sit cross-legged on the carpet, only the ruler himself and his son having the flat round cushion that denotes superiority. Perhaps some readers require to be told that all natives of India doff their shoes on coming to a carpet or other sitting place: here, from the Maharaja downwards, all of them are barefoot; their shoes are left outside, and socks they are not used to.

Thus seated, then, and supported, the Maharaja looks out down on the petitioners who stand in the Square, which is some feet lower than the room. Each coming in succession, according as their petitions, previously written on stamped paper and given in, are called on, stands in front with hands closed, in the attitude of supplication, while the prayer is read out.

The subjects of the petitions are wonderfully varied; perhaps an *employé* will ask leave to return to his home, or to take his mother's ashes to the Ganges; next, may be, a criminal is brought to receive final sentence; then a poor woman, with face veiled, will come to complain of some grievance or other; or a dispute about a broken contract of marriage will have to be decided. These are all listened to patiently enough, and on the simpler cases the decision is given at once and written on the petition. The civil and criminal cases have usually been previously inquired into by judicial officers, in the courts of first instance, and perhaps have even been adjudicated on by the Appeal Court of Jummoo or of Sirīnagar, but it is open to suitors and complainants to try their fortune with the Maharaja himself. The Maharaja does his best to get at the truth; will examine and sharply cross-examine the witnesses. It frequently ends in his referring the matter to the magistrate for investigation; in which case it will be again brought before him for final decision.

During this time the Square is thronged by numbers of people of such a variety of races as is not often seen even in India. There are men from all parts of the dominions. Some from the higher countries, come to find work at Jummoo when their own homes are deep-covered with snow; others are here to prosecute a suit, for which purpose they are ready, and sometimes find it

necessary, to give up months of their winter. There are Kashmīrīs and Baltīs by scores, Pahārīs of various castes, Ladākhīs occasionally; some recognisable at once by the cast of their features, others by a characteristic way of keeping the hair; the stalwart heavy frame of the practised Kashmīrī porter too is unmistakable. Then from beyond the territories come occasional travellers, as Yārkandī merchants, or pilgrims to Mecca from farther off still; while from the west there is always a succession of Kābulīs and other Pathāns or Afghāns. Horse merchants from Kābul are always finding their way to Jummoo to sell their animals to the Government, while wild fellows out of the villages of that country or of the neighbouring Yūsufzai come eagerly to take service among the Irregulars of the Maharaja's army.

Thus till nearly noon the whole town is alive with business in the streets and with Government work in the Square. Then the Court breaks up, and the Maharaja goes in to his dinner; the ministers disperse to their homes, each of them accompanied by a string of followers, or "clientèle," who will now be able to get a hearing from their patron in the half hour before dinner; the offices close, the guard of honour is dismissed, and in a very few minutes the Square is quiet and almost deserted.

So for three hours it remains; and for that time business is slack in the bazaars, till men, waking up from their siesta, bestir themselves again. At four or five o'clock the Maharaja usually comes out for a ride; his elephants and horses have been waiting at the Palace-gate; the ministers had gone in and now accompany him out, one of them probably mounting on the same elephant with him, or if the Maharaja chooses to ride on horseback, all will closely follow him. Orderlies run, some in advance to clear the way, and some at the Maharaja's very side, even holding on to his saddle-trappings. The natives of India are not ashamed of, and do not in any way dislike, this close attendance, which adds both to their state and their safety. They are puzzled to understand how it is that Englishmen like better to walk alone.

A three- or four-mile ride, a visit to some building in progress,

or to one of the temples, perhaps flying a hawk, or paying respects to his spiritual adviser, the only person whose house he enters, these pursuits fill up the time of the Chief till dark, and then the evening Darbār begins.

This will probably be a more private one; or the Miān Sāhib, the Maharaja's eldest son, will likely hear petitions, while his father does business with some of the ministers apart. It must also be borne in mind that business is not the only thought of a ruler while sitting in Court. The Darbār is not like the Kachahrī of a Deputy Commissioner in our Indian Provinces, from which he runs away the moment he can get free. It is at the same time a social meeting; a chief opportunity for the ruler to see people from all parts, and to hear—if he will choose to ask, and they are straightforward enough to give—opinions on what is going on in the world. So conversation often alternates with work, especially in these evening Darbārs, which thus last on till eight or nine o'clock, when all disperse to their homes to supper and bed.

Such are the every-day customs of the Court, which are followed with great regularity.

SPECIAL DARBĀRS.

There are certain days, days of festival, when special Darbārs are held in somewhat different form. These four — Basant Panchmī, Nauroz, Sāir, and Dasera — particularly should be noticed.

Early in our year, on the fifth of the Hindū month of Magh, the feast of *Basant Panchmī* is held in honour of the coming of spring, which by that time is thus near that the very coldest weather has gone by and the tide of the season has turned.

Everyone on that day wears yellow, some dressing completely in that colour, others only putting on a yellow pagrī.

It is the custom on this and on the other three days above named, for the Maharaja's servants to bring him a *nazar*, a present —usually of money—according to the means, or rather in proportion to the pay, of the giver. This has now become so regulated

that everyone is on these days obliged to give from a tenth to a twelfth of his monthly pay. These sums amount in the year to what is equivalent to a three-per-cent. income-tax, levied, however, only on Government servants.

To receive these presents and to do honour to the day, a grand Darbār and parade of troops is held. The first time I was present it took place in the open, on a raised platform at the edge of the Parade-ground, beneath a large shāmiāna, or awning. The Maharaja and all the members of the Court came in procession from the Palace, on elephants and horses decked in their most gorgeous trappings; the elephants are almost covered with long velvet cloths embroidered deep with gold, upon which the howdahs are mounted.* The horses are handsomely caparisoned with velvet and gold saddle-cloths and jewelled head-stalls.

The Maharaja, dressed in yellow and silver, takes his seat upon a cushion covered with a silver-embroidered velvet cloth of the same colour; for yellow pervades the whole ornamentation. Then the troops, who were drawn up in line all round the Parade, in number from between two and three thousand, after a general salute, march past, and at the same time the presentation of nazars begins.

First the Mīān Sāhib and his younger brothers put before their father bags of gold coins; the chief Dīwān follows with a smaller number, and the other ministers and courtiers in succession give something, either in gold or rupees. The number of coins presented, when not calculated upon the income (as it is not with the few higher members of the Court), is always an odd number, as 11, 21, or 101. Then the servants of lower rank come forward, each being presented by the head of his department; the name of each is read from a list, and the amount of his nazar is marked down; those that are absent will have the sum deducted from their pay. So a large heap of rupees gradually accumulates in front of the Maharaja.

All through this time, besides the hum and hubbub of so many

* Here are none of the canopied howdahs common in the states of Hindostān; ours are in the form of trays with upright sides; they are covered with silver or silver-gilt plate; there is room for three people to sit cross-legged in each.

people pushing impatiently forward to come in front of His Highness that their salaam may be noticed, there is the noise of the bands of the regiments as they march past; or, when that is over, of the dancing and singing of the dance-girls, who from the first have been waiting in numbers. But with all this the Maharaja will find occasion to give a kind word to some old servant, or a word of encouragement to the son of one who may be presented for the first time, showing by his greetings how good a memory he has for people and for faces. Then, later, a few poor people, perhaps gardeners or such, on so little a month that the tenth of it would not amount to a piece of silver, will come with a tray of fruit or vegetables, and be happy if the Maharaja takes notice of it.

When all have passed, a little time may be spent in watching the nautch, or dance, and then, the Maharaja rising, the assembly disperse.

Much the same thing as this goes on in Kashmir without the presence of the Maharaja; at least, there is the full-dress Darbār with music and dancing, while the servants of Government deposit their nazar in front of the gaddī or cushion which is placed to represent him.

The next periodical Darbār is on *Nauroz*, a Persian festival introduced into India by the Muhammadan rulers, and now kept up even in such a thoroughly Hindū Court as this. It is here celebrated in just the same way as the last, without, however, the prevalence of yellow in the dresses.

The third festival is called *Sāīr*; it is held in the autumn. In this, which lasts for several days, not only the Government servants are present, but heads of villages, tradespeople, workmen, and others, from many days' journey around, come in, bringing with them for presents specimens of their work, or of the products of their land or neighbourhood. On this day green is the prevailing colour worn.

The fourth and last of the nazar-darbār days is *Dasera*. It is a great festival, celebrated all over India in memory of the victory of Rāma, or Rām, one of the chief heroes of Hindū mythology, over Rāwan, or Rāvana, the King of Ceylon. The several inci-

dents of the war, as told in the Mahābhārata, are illustrated during a succession of days. Dasera is the last of these, when an immense image is placed to represent Rāwan; Sīta, the wife of Rām, whom Rāwan had stolen away, personated by a boy dressed up, is carried towards, and lets fly an arrow against him. This is the signal for a general assault, and in the midst of the roar of artillery the images of Rām's enemies are blown up, burnt, and destroyed. It is just before this climax that the nazars are presented.

As this Darbār is held at the beginning of the cold weather, it is usually the first day of coloured clothes, pashmīna being worn in place of the plain white calico and muslin common through the hot weather; so the dresses are gay and varied.

There are a few other feasts held which may have an interest.

Holī is a strange festival, a carnival indeed, the object and origin of which are not very clear. It is a movable feast, and comes in February or March. While it continues the Hindūs free themselves, or at all events consider that they have a right to be free, if they choose, from the restraints of decorum, and indulge in fun.

In some places and in some Courts the carnival is kept up with great spirit for many days. Ranjīt Singh's Court was noted for its celebration of Holī. At Jummoo it lasts a week, during which time business is attended to in the mornings as usual, but each afternoon is given up to the rites and orgies of the Holī. All the courtiers, dressed in white, take their seats, with the Maharaja, in some open place; then there are distributed around handfuls of yellow, red, and purple powder, which the people throw over one another, till their faces and beards are completely covered with it, and become of a frightful hue; then syringes are brought, and coloured water is squirted about, till all, the Maharaja included, are in as good a mess as can be imagined. At certain times, at a word from the Maharaja, the two lines of people facing each other make a mimic attack, by throwing handfuls of the powder and balls of gelatine or glue filled with it, till the whole air is made dark with the clouds of it.

On the last day the licence of Holī is allowed in the streets as

well; then no one can complain if, on going through them, he be pelted with colour-balls, or showered on with tinted water.

Diwālī is held at the beginning of winter. It is a day for the worship of Lakshmī, the goddess of wealth; the characteristic of it is illumination. Lamps are placed in long regular lines on the cornices of all the public buildings, and hardly a house is left without its own row of little oil lamps. The name of the day must be derived from the Hindī word *dīvā*, a lamp. At this time merchants collect their money in a heap, and bow down and worship it. Gambling, too, is practised by nearly all on this day, under the notion that it will bring luck for the coming year. In the evening a dress Darbār is held.

It is the custom to begin illuminations early, almost before it falls dark, and they are over by the time that in England they first light up.

*Lori** is a festival and religious ceremony, not, I think, general through India, but observed in these hills and in the Panjāb. The religious part of it consists in offering a burnt sacrifice, but to whom the sacrifice is made I never was able to find out. A large fire is made in the Square; the Maharaja and his people, having first made their obeisances in the temple hard by, standing round, throw in handfuls of grain of all sorts, the signal for this being the decapitation by sword of a white kid, the head of which they throw into the fire first. The people keep the feast as well; in passing down the bazaars on this night, one has difficulty, in the narrow streets, to avoid the fires that every here and there are burning for the sacrifice.

In these and all other festivals and rejoicings, the chief entertainment of the Darbār is the nautch, or dance. Twenty or thirty dancing-girls are assembled, but the dancing is done by but one at a time. She—followed closely by two or three men, each drumming with their hands on a pair of small drums fastened in front of them, end up—advances with short steps taken on the heel, almost without lifting the foot off the ground, so that the movement is hardly indicated by any change in the position of the body. This is accompanied by stretching out and posturing of

* This word has the cerebral *r*.

the arms and hands in as elegant a fashion as possible; and the women of India have generally very well-formed hands and arms, which their tight-fitting sleeves show off.

Then the girl begins a song of a somewhat monotonous melody, plaintive in effect, but partly spoiled by the shrill and loud tone it is given in. Here the accompaniment of the men with drums comes in, and they join their voices, too, exceeding the lady in volume of sound and in harshness.

The women are dressed not untastefully, except for their fashion of high waists. They have a gown with a long skirt in many gathers, usually of coloured muslin; over their heads they wear a chādar, or long veil, often of muslin inwoven with gold; this is used by modest women to keep the face from the view of strangers; here it is held and moved about in graceful ways, and made of more service to set off than to conceal the beauties of the wearer. Over the forehead hang gilt or golden ornaments, and round the ankles are strings of little round silver bells, which are made to tinkle in time with the dance by striking the heels together.

There is no real dance, either of steps or figures; it is simply advancing and retiring to music; the end of it, apparently, is the display of the girl's face and of the graceful movements of the arms. Although for us, who are used to greater variety and activity of movement, and are used to seeing women unveiled, these nautches are tame enough, and, after the first, hardly worth looking at, yet they are certainly much enjoyed by the people of India. The song, too, is much thought of and delighted in. At our Darbār all sit gazing continuously; there is seldom any conversation held during the time; all solemnly look on and listen.

A HUNT.

The Maharaja is fond of sport, and he preserves closely for some twenty miles on each side of Jummoo, along the foot of the hills and over the plain. The game is chiefly pig, but spotted deer also are found. The hunting season is in the cold weather, from October or November till March.

In some parts, where there is no open ground, the coverts are

driven towards a line of stages * made among the branches of the trees, on each of which sits a marksman, so as to be out of sight of the game. A large bag is usually got from a drive of this kind.

The more exciting sport, however, is pig-sticking, for which in some places the ground is well adapted. The way of it is this. The rendezvous is from seven to twenty miles away from Jummoo; the kind of place chosen is where there is a good large covert, one thick enough for the pig to be at home in, or else a field of sugar-cane, with an open plain in front, and, if possible, no more cover for half a mile or more. Preparations are made and orders are sent out the evening before. Through the night, sepoys and watchmen are going through all the villages that are to be called on for their services, giving notice, by crying out with a loud voice, of the place and time of meeting. It is incumbent on the inhabitants to send one man from every house, and before sunrise these take their way, stick in hand, and some with tomtoms and other equally musical instruments, to the appointed place.

The Maharaja may start from Jummoo about sunrise; he is accompanied by all his Court; they will, probably, ride to the meet on elephants. Then there is a long procession of followers—there are scores of led horses, then commonly a squadron of lancers from one of the regiments; numbers of the Miāns, who are always eager for this sport; numerous attendants on the Dīwāns and the Wazīrs; bandūqis, or orderlies of the Maharaja, carrying long guns in a loose red cloth cover; men with dogs of various sorts coupled together; *bauriās*, men whose business is snaring, with their short heavy spears and their snares; one or two *Hakīms*, or physicians, and many others who do not intend to take part in the hunting, but come because there is nothing doing that day at Jummoo.

On the party reaching the covert-side, the beaters—the villagers who had been collected, who are generally about 2000 in number—are placed close in a line along one edge of the wood, and the riders take up their places on the opposite side in such positions as to have a vantage-ground for following up the pig when they

* The stage is called *mannā*, in Dogrī; in Hindostānī, *machān*.

break, without letting themselves be seen till such time as the animal's retreat is irretrievably cut off. Then, when all is ready, the signal is given by bugle, and the whole line of men enter the wood together; keeping as close and as well in line as they can, they advance, beating every bush likely to conceal game of any sort, and uttering various frightening cries. All this being accompanied by the report of blunderbusses and the discordant sound of irregularly-beat drums. This, if well kept up, effectually drives forward all the game. The progress is, of course, slow—slow enough to keep in impatience the riders at the farther side, who from the beginning of the beating have been watching, spear in hand, for a break. First come out, as a rule, the jackals; then, perhaps, a hare or two; and later, when the line of beaters are closely nearing the edge, and there seems no other chance for it but to run, the pig break, often doing so in a spore of ten or a dozen, and make across the plain for the nearest wood; and then begins the rush.

In this "royal" hunt, with such a crowd of people mounted, it is impossible to enjoy the sport at its best. Your run after the boar you have singled out may be interrupted by some horsemen who have been waiting half a mile off, for the bare chance of something coming their way; or after one pig as many as twenty spears may be coming from different quarters, giving him no chance for his life. However, there is something to be got from it; a man well mounted is pretty sure of a spear or two, and often enough a pig will steal away clear of the crowd, and give good sport to the one or two riders who may have seen him.

Some of the Court are really good riders and pig-stickers, and go about their work like sportsmen; but the majority think more of slaughtering than of fairly riding, and are anxious to see a large "butcher's bill," without much caring how the victims fall. The ways, indeed, are various; besides the spearing, they are pulled down by dogs that are let loose on them; sometimes a sepoy on foot will cut down a pig with his talwār, or sword; some, again, are knocked over by the bauriās with their heavy spears; and others are caught in the snares and there murdered.

On an ordinary good day twenty or thirty are sure to be brought in.

If in the course of the beating any number of pigs have broken through the line—which they are very apt to do, as the men will often let them pass through in preference to facing them—the same jungle is beaten over again for a second chance, and then perhaps another covert is tried; and so on, with, may be, an hour's rest for a picnic breakfast, till evening, when the whole party return in order as before to Jummoo; and the beaters, tired and hungry, take their way to their homes, having performed a service which may be said to be one of the conditions of tenure of their land.

Before starting for home the quarry is viewed, and each successful man tries to recognise the pig he had the honour of putting the first spear into. Then the Maharaja gives orders for the distribution of the game. A proper proportion is sent in for his own household. The courtiers get their share, and the rest is probably sent to some of the regiments.

Not often, but now and again, a casualty occurs; but there is very seldom a fatal accident. The boars are savage enough when attacked, and will charge boldly; but in such a meeting as has been described they are sure to be overpowered by numbers; still I have seen one bring down four horses in succession.

With a little more management and fewer riders the sport would be fine, for the pigs are numerous, and the country is good for riding, being only here and there broken by ravines; indeed, in spite of drawbacks, we have had some memorable days' hunting.

A Royal Marriage.

In the beginning of 1871 an event occurred at Jummoo, which, from its unusualness, and from its well illustrating some customs of the people and of the Court, may find a place in this account. This was the marriage of one of the two daughters of the Maharaja.

Such an event was unusual, because in former times, and

down to only twenty-five years before, it had been the practice as explained in the last chapter, for people of the caste to which the Maharaja belongs—the branch of the Rājpūts which hold their traditional customs in purity, and allow their hands to be sullied by no labour but the work of fighting or hunting—to destroy their female children immediately after birth. The men, unable to find wives among their own caste-people, took them from the caste next below.

So it happened that for long there had been no marriage of a daughter of the house of the Rajas of Jummoo, though tradition spoke of such a thing having, from some special circumstances, occurred eighty years or so ago.

This practice of infanticide coming to an end in 1846, Maharaja Gulāb Singh, a few years afterwards, opened his eyes to the fact that he had a granddaughter, and was at a loss to know to whom he should marry her. For it is no easy matter; the giving of a girl in marriage is acknowledging yourself to be lower in caste-standing than the family she goes to, and there were few in this part of India of whom he would willingly acknowledge that. But a neighbouring Raja there had been, the Raja of Jaswāl, near Kāngrā, whose family were ancient and descent pure enough to satisfy the Jummoo family. He, however, had been dispossessed of his principality by the British, on account of participation in one of those conspiracies and combinations that some of the Panjāb chiefs made against our Power in the interval between the two Sikh wars. At the time we speak of he was detained a state-prisoner in British India. Him Maharaja Gulāb Singh begged off, explaining his purpose that a scion of the Raja's family should marry his granddaughter. So for many years the Jaswāl Raja lived in the Maharaja's territory, and now had come the time for the marriage of his son with the present Maharaja's daughter.

It had been delayed later than had been expected, and the two were older than Hindū bride and bridegroom commonly are. The bridegroom was about twenty, and the bride had reached fifteen; but now, at last, in the spring of 1871, all was ready.

I had an opportunity of seeing the *trousseau*, which was on view in the Palace at Jummoo. With it was put the dowry. Indeed, there is here no distinction between the two. The principle is that everything, including cash, that can be wanted in a household, should be supplied in quantity enough to last for many years.

The things were laid out in one of the large reception-halls, and, overflowing that, filled also side rooms and verandahs, while the more bulky and rougher articles occupied the courtyard. It was really a rich display. In front of the entrance was a heap of money-bags—one hundred thousand-rupee bags—making a lakh of rupees, the value of 10,000*l*. Close by, on trays, were gold coins to the amount of 2500*l*. Then, laid all over the floors in trays, were the dresses, eleven hundred in number, both made up and in piece, of muslin, silk, pashmīna, and gold brocade, some undoubtedly rich, and all more or less adorned with gold braiding or edging; with many of them were gold-worked slippers, these long and narrow, with the heel pressed down.

Next in importance was the jewellery, divided into two classes, that of plain gold and silver, and that with precious stones, besides necklaces of gold coins.

Near these were silver dishes for household purposes, and a tray and cups of solid gold. Along one side were elephant and camel trappings, including much of massive silver; and there was some handsome ornamental saddlery, and silver bells and necklaces for cows.

Then there were many miscellaneous things—fans of various sizes and shapes; a large state umbrella, with gold-covered stick; drums and horns, and, strangely, dolls and balls for the bride to play with.

We must not pass without notice the dhola, or palankin, in which she is destined to be carried away, covered with gold brocade; while five plainer ones are ready for the five attendants who are to go with her. Outside were pitched a set of tents and awnings, laid with handsome carpets, all part of the outfit; and near at hand were exposed the household utensils—cooking-pots

in number, and some of gigantic size for feasts; iron spits, and other cooking contrivances; axes, shovels, and a variety of other things too many to enumerate; *numbers of horse shoes and nails.*

The wedding and the feasting took up three or four days. On the first, the bridegroom, with his father, came in procession through the city, dressed in gold brocade, and veiled with a fall made of strips of gold tissue. At nine in the evening, accompanied by a great crowd, they reached the Square, where they were met and greeted by the Maharaja, who retiring, the bridegroom and his father were brought, amid the glare and noise of fireworks and bombs, to the Shīsh Mahal, or mirror-room, and there sat surrounded by their own chief people and a few of the Maharaja's, while a nautch was performed in front of them. After half an hour the Raja and others left, and his son remained and had a light meal—all this being fixed in their customs, even to what he should eat.

After midnight, the bridegroom was carried inside the Palace, and the marriage ceremony was performed. This is done in great privacy; not even the bridegroom's father is present, only the Maharaja himself, one or two pandits (the officiating priests) and one or two of the Maharaja's near relations. This, of course, I could not myself witness; but I heard of a curious part of the ceremony. When the Maharaja is to give away the bride, as the gift should come from both him and his wife, the Mahārānī, being behind a curtain, is connected to her husband by a long piece of cloth, and so made partner in the rite. The ceremony took, I believe, two or three hours, and then the bridegroom, leaving his bride still in her father's house, returned to his quarters.

Another of the strange customs is that when the bridegroom comes to the bride's house, as at this time, he is assailed by the women of the household with abuse, and songs of abuse are sung at him; these, I believe, are composed of nothing better than the equivalents of the usual Indian abusive terms.

It must be understood that the occasion is not supposed to be one of rejoicing on the side of the bride's party, but rather one of

grief; thus all the signs of enjoyment were on the bridegroom's side. The fireworks and salutes and all were prepared by his people only, and, on this same principle, we of the Maharaja's Darbār wore no better or gayer clothes than our every-day ones.

The next day there was nothing doing, except that the bridegroom's people held high festival at their own place, in which none of our side joined.

The third day the Maharaja entertained the party at dinner. The preparations were made in a courtyard having arcades on two sides of it. The bridegroom and his father first came and sat down for a while with the Maharaja, who was seated beneath an awning on the roof, at a spot which commanded a view of the whole; then these visitors were conducted below, and all their party (who amounted to 700) placed themselves according to their own arrangement. All this preparation took a couple of hours. At last all were seated, either under the arcade or in the open, on strips of woollen cloth (which is supposed to have some special character of purity as compared with other fabrics), or else, in the case of Brahmans and a few others who do not eat meat, on a platter, so to say, of leaves sewn together. Then the serving of the meats, twelve or fifteen sorts, to each person, took nearly another hour. They were put into leaf-cups, while for the rice a leaf-platter was laid. At last, when the rice was served, a heap to each man, the Jaswāl Raja began his eating, and all followed suit, and well made up for the waiting. For drink, water is the only thing given. Soon after this the Maharaja, who had been looking on at the preparations, left, for neither he nor any of his people were to partake with their guests.

The next was the last day of the ceremonies. The bridegroom was to take away his bride. At two or three in the afternoon, he came quite quietly on an elephant, and went inside the Palace, while the courtiers congregated on the steps leading down from the Palace-door, and all the people of the city looked on. The procession, which was to be long, slowly began to file away. In speaking of the dowry, I had not mentioned that a number of horses, cows, camels, &c., formed part of it. These now headed

the procession; first proceeded 51 cows, then 51 buffaloes, adorned with red and yellow clothing and with the silver necklaces; then 51 fine camels passed, with cloths of the same colours; 300 sheep and goats, too, were collected, but they did not go out in procession. Next came coolies, carrying the trousseau; all the goods described above they carried in covered baskets on their heads; about one thousand men walking regularly in pairs; these were followed by a hundred sepoys in full uniform, bearing each a bag of 1000 rupees, thus was the lakh of rupees carried; then the gift horses were led out, showy in action and gaily trapped, followed by three elephants, which also formed part of the dowry.

Immediately after these, appeared, from the gateway of the inner palace, the dhola, in which were the bride and bridegroom; so closely covered was it that not a glimpse of them could be got; this, too, was their first interview with each other, for they had only met once before, and that was at the marriage ceremony, when they were both veiled. The Maharaja accompanied the bride and bridegroom to just outside his doors, and no farther. There joined in the procession, so as to precede the dhola or palankin, the singers and players with their tom-toms and their squeaky instruments, while immediately in front of it walked five of the Maharaja's chief officers; then came the Mīān Sahib, the bride's brother, on foot, holding the pole of the palankin. The procession was closed by two of the Maharaja's treasurers scattering money from an elephant; first gold pieces, of which one saw handfuls glittering in the sun as they fell, and afterward rupees.

It should be told that a part, though only a small proportion, of the trousseau was of presents from the Maharaja's chief officers and dependents, and other natives of standing, who were invited from a distance. After a valuation, I concluded that the cost of what the Maharaja gave, including cash, goods, and animals, was about 70,000*l*.

The pair went at once to their new home, some 25 miles from Jummoo, where there had been assigned a jāgīr or estate for their maintenance.

I have given space for the description of some of the customs

of the Court of Jummoo, both every-day and occasional ones, not only for the interest that may be felt in the customs themselves, but because the whole city is bound up in one way or another with the Court, because so many thousands are connected with it either directly or indirectly, and because all its doings occupy such a large space in the daily business and in the minds of the people of Jummoo.

CHAPTER V.

VARIOUS PLACES IN THE OUTER HILLS.

EAST OF THE CHĪNĀB—WEST OF THE CHĪNĀB.

THE plain at the foot of the hills, being for the most part capable of cultivation and in great part already cultivated, is thickly peopled; everywhere populous villages are to be found. But when we are once on the hills themselves we meet with villages rarely, and these but small; scattered hamlets and scattered houses denote how scarce is land that can be made fit for tilling; sometimes in little nooks and sometimes on steep hill-sides are terraced patches of ground, whose owners either cultivate them from the nearest village, or have made their solitary home close by. In the dūns, however, there are wider spreads of cultivated ground, though separated from one another by dividing ravines.

A village in these parts is a collection of low huts with flat tops, mud-walled, mud-floored, and mud-roofed. The floor and walls are neatly smeared with a mixture of cow-dung and straw. The roofs are timbered either with wood of one of the acacias or with pine. They are supported by one or more pillars, which are capped with a cross-piece some feet in length, often ornamented with carving, that makes a wide capital beneath the beam.

There is no light in the rooms but what may come in at the opened door, or through the chinks of it when closed, such a complete shutting out of the air being equally useful in the very hot and in the cold weather. The substance of the hut is a very bad conductor of heat, and this character tends to keep the interior of an equable temperature. I have often been glad to retreat to such a place from the scorching sun that a tent is but a poor protection against.

In front of the cottage is a level and smooth space, nicely

kept, where the people of the house spend nearly half their time, and where their cooking places are arranged. The whole cottage is, as a rule, neatly kept and carefully swept; the higher castes, especially Brahmans and Rājpūts, give, considering their appliances, an admirable example in this respect.

The larger villages and the towns have a double row of shops, what is called a bazaar, each of which consists of much such a hut, with its floor raised two or three feet above the street, and with a wider doorway, and in front of it a verandah, where the customer may come and sit with the shopkeeper to transact business.

Of the towns in the Outer Hills there are none besides Jummoo of any great size, and there are only one or two others that can be said to be flourishing, for the poverty and the thinness of the population of the country round is against them. Since, however, some towns and some other places show features of interest, we will proceed to visit a few and note what has appeared worthy of observation.

EAST OF THE CHĪNĀB.

Basolī was the seat of one of the Rajaships between which the low hills were divided before Jummoo swallowed up so many. A large building still remains that was the palace; it is now unkept and almost deserted. The town had already decayed but for the settlement in it of some busy Kashmīrīs, who by their trade of weaving bring some prosperity.

Basolī is one of several places in the low hills, being at the edge of a wood that is seldom disturbed, where the red monkey abounds; the monkey, being respected by the Hindūs and protected by the laws, has here come to be most bold, so he invades the town in great numbers, clambering over the palace walls and scampering across the chief open space of the town, and often enough doing mischief.

A day's march to the northward is *Balāwar*, which is the oldest seat of the rulers who afterwards went to Basolī. It is at the foot of a brushwood-covered spur of hill, and has beneath

it a bouldery river-bed a mile or more wide. There are remains of towers and walls that protected the place, some towards the jungle, some at the edge of the cliff that overhangs the stream-bed, and there is an old gateway at the top of the slope that gave access from below. These, as well as the Mahal, that is to say palace or mansion, the remains of which show it to have been substantially built though not large, were the work of the Balāwar Rajas. One other building there is that still has repute; this is an old Shivdwāra, or Hindū temple, much ornamented with carvings, in the sandstone that is the material for all the buildings. Of this temple one side has fallen, and the rest seems ready to follow, while the remnants scattered about of columns and other pieces of masonry show that the buildings were formerly more extensive; the space around the temple is now all shaded by large banyān trees. Balāwar, as at present inhabited, is no more than a village.

Padū is a place of name a few miles from Balāwar, of name because it also was the seat of a separate rule, whose Rajas were of one caste (a subdivision of the Rājpūts called Pāl) with those of Kulū, Bhadarwāh, and Balāwar, or Basolī; the four, being so allied, were often at war with each other. The last five Rajas of Padū, I hear, were—

Pur Napāl.
Prithī Pāl.
Jy Singh.
Avtār Singh (in the time of Ranjīt Singh of Lāhor).
Umed Singh.

Rāmkot is a place some miles west, where used to live a family of feudal power, whose lords were the Jummoo Rajas. Its original name was Mānkot, and the family of Miāns who held it are called Mānkotiā Miāns. It is not long since the new name was given to the place. There is a large fort, which has been handed over to the Maharaja's new son-in-law for a dwelling-place.

Rāmnagar, some miles north of Rāmkot, is where the Outer Hills join the Middle Mountains. It is built at a height of 2700 feet above the sea, on a small triangular plateau, which is cut

off on two sides by ravines, and connected along the third with the slopes of the hills that surround and shut it in.

This town has signs of having at one time been among the most flourishing in these parts. It was the capital of the country called Bandrālta, which used to be governed by the Bandrāl caste of Miāns. Their rule was displaced by that of the Sikhs under Ranjīt Singh, who took the place and held it for a time, until, partly for the sake of rewarding a favourite, partly because of the trouble of holding it against the hill people, the Thakars, Ranjīt Singh made Suchet Singh, the youngest of the Jummoo brothers, Raja of the place. Raja Suchet Singh held the place till his death. But I heard of a great effort made by the Thakars against him too, when some thousands came to assault it. The Dogrās, however, held out in the fort, which is a well-planned work, until help came from the Sikh army.

There are some remains of the house of the rulers of the time of the Bandrāl Miāns; but their descendants do not live here; they found a home and a pension in British territory.

The town of Rāmnagar bears marks of the presence of Raja Suchet Singh. He took a pride in the place and improved it and encouraged the growth of it. The two long masonry-built bazaars were in his time full and busy; merchants from Amritsar and from Kābul were attracted to the place. Vigne, in 1839, remarked the great variety of races of people who were to be seen there; the bazaars were then being constructed. A large palace adorned with gardens, and the well-built barracks, show that Suchet Singh knew how to make himself and his people comfortable. On his death, which occurred about 1843, Rāmnagar came under the rule of Jummoo, and there was no longer the presence of a Raja to keep up its prosperity, which was indeed short-lived; and now the palace is deserted, and the bazaars are but half inhabited. There are a good many Kashmīrī settled in Rāmnagar; some of them are occupied with shawl work, executing orders from Nurpūr and Amritsar, and some in making coarse woollen cloth.

Udampūr is a modern town, situated in the innermost dūn

before one comes to the Middle Mountains; it is on the upper plain of that dūn, about 2400 feet above the sea. As a town it was founded by Miān Udam Singh, the eldest son of Maharaja Gulāb Singh, who would, had he lived, have made it an important place; as it is, there is a good large bazaar, and the present Maharaja has begun building a new palace there, and has entered on the construction of a canal to bring water from the Tavī River on to the plateau, for household and garden purposes and for general irrigation.

The next town is *Kiramchi*, only 4 miles away. This and the tract of country near round it used to be under a Raja or a Miān of the Pathiāl tribe of Rājpūts, who was tributary to Jummoo, paying to it yearly 2000 rupees and giving the services of some 10 horsemen. About the year 1834 Gulāb Singh, having made up his mind to possess the place, refused the tribute and sent a force to besiege the fort; after some time they took it, and the country was annexed. What now remains of the fort is a well-built wall of sandstone and a dry tank; it is on a rocky mound in a commanding position behind the town.

Within a couple of marches from Jummoo, to the eastward, are three or four places worth seeing. One of these is *Babor*, in the Dansāl dūn, near the left bank of the Tavī; there are the ruins of three old Hindū temples, of what age I know not; the buildings were of great solidity and considerable beauty; the chief feature of one of them was a hall whose roof was held up by eight fluted columns supporting beams of stone 10 feet in length; on these beams were laid flatter stones chequerwise, so as to fill up the corners of the square as far as the centre of the beams, and so make a new square cornerways to the other; on this was laid another set of stones cornerwise to this, and so on till the whole space was covered; this square mass of stone was ornamented with carving. The material of these buildings is a slightly calcareous sandstone which is found among the strata near; it has well stood against weathering, and its toughness may be known from one of the beams of it used in the construction being as much as 14 feet in length. No mortar was used in the

building; this must have been a predisposing cause of the lateral shifting of some of the stones one upon the other which is to be observed, the moving cause being, I take it, earthquakes. The other neighbouring ruins have a great resemblance to this first, but they are not all three equally ornamented.

These old temples, though clearly devoted to the same worship as what is now followed—Ganesha for instance, the elephant-headed god, being among the prominent figures—are quite neglected by and hardly known to the people around. But we will now go to a spot that is in the bloom of repute as a holy place, that is resorted to on certain days both by the people of the hills and by many from afar.

This is *Parmandal*, a place of pilgrimage that the Hindūs visit for the purpose of obtaining a moral cleansing by bathing in its waters. It is situated in a nook among the low hills, far up one of the ravines that drain down to the plain. I went there with the Maharaja when he and all his Court made the pilgrimage—if so it can be called—on I forget what special day. It is two marches from Jummoo, and we went with a large camp, nor were we intent wholly on the religious ceremonies, for on the way the jungles were beaten and some good pig-sticking rewarded us.

We entered the hills by the winding valley of the Devak stream, the name of which denotes a sacred character. We encamped at Utarbain, which is a place but next in religious importance to the one that was our goal; here were two gilt-domed temples surrounded by cells for Brahmans to live in. The Maharaja gave food this day to all Brahmans who might come; a large number were collected in the quadrangle to partake of it, and presents were given—quantities of flour and other provisions, and money as well—to those Brahmans who permanently stay here. From Utarbain we made the journey to Parmandal and back in an afternoon; we continued up the sandy bed of the same stream; as we went on the valley became more confined and its sides more rocky; thus winding up we suddenly came at one of the turns in sight of a strange collection of buildings strangely situated. A double row of lofty and handsome buildings with

nought but the sandy stream-bed between them; there was the chief temple with a fine façade, and, behind that, numerous domes, one gilt one conspicuous; most of the others are houses built by the courtiers of Ranjīt Singh, who was attached to this place and occasionally visited it; they are now inhabited by Brahmans.

The whole place was alive with people who had come to bathe and to worship; booths and stalls, as for a fair, had been put up in the middle of the sandy space; the picturesque buildings, backed close by sandstone rocks, and the crowds of cheerful pilgrims, made a gay and pretty scene. It is only for a short time after rain that a stream flows over the sands, now they had to dig two or three feet to reach the water; numbers of holes had thus been made, and the people scooped up enough water to bathe themselves with; the atoning power of such a ceremony is considered in these hills to be second only to that of a visit to Harīdwār on the Ganges.

A journey of not many miles from Parmandal, but by a rugged path over difficult hills, would bring us to the two strange little lakes named *Saroīn Sar* and *Mān Sar*, the latter word of each name being the one used for "lake." They are 8 or 10 miles apart, but are on about the same strata, and are each about 2000 or 2200 feet above the sea, being situated somewhat high on or between the parallel ridges.

Saroīn Sar may be said to cover a kind of platform, from which on two sides the ground falls rather steeply, while on the other sides are low hills; the lake is about half a mile long and a quarter of a mile broad, a pretty spot; mango trees and palms adorn its banks, and cover thickly a little island in the centre, while the sandstone hills round are partly clothed with brushwood, and shaded, though lightly, with the bright loose foliage of the long-leafed pine.

Mān Sar is a larger lake, perhaps three-quarters of a mile long and half a mile broad; it is in a very similar position, at a high level, and nearly surrounded by hills, but at one side there is a great descent into a steep valley or ravine.

For the origin of these two hollows I have no theory to put forward; they are rock-basins, the rock being either a soft sandstone or sandstone with clay interstratified. I do not know their depth, but do not think it great; there seem to be springs of water in the lakes themselves; they deserve a more careful examination than I made of them.

WEST OF THE CHĪNĀB.

We will now look at a few places to the west of the Chīnāb river, in the Muhammadan country.

Akhnūr, which is the first town, will most naturally come into the next chapter, as it lies on the road there to be described.

Bhimbar, 40 miles farther west, is a rather flourishing town. The Rajas of Bhimbar had their castle here; some of it still stands; it was a collection of buildings with loop-holed walls, making an enclosure 400 or 500 feet long and less than half that in width.

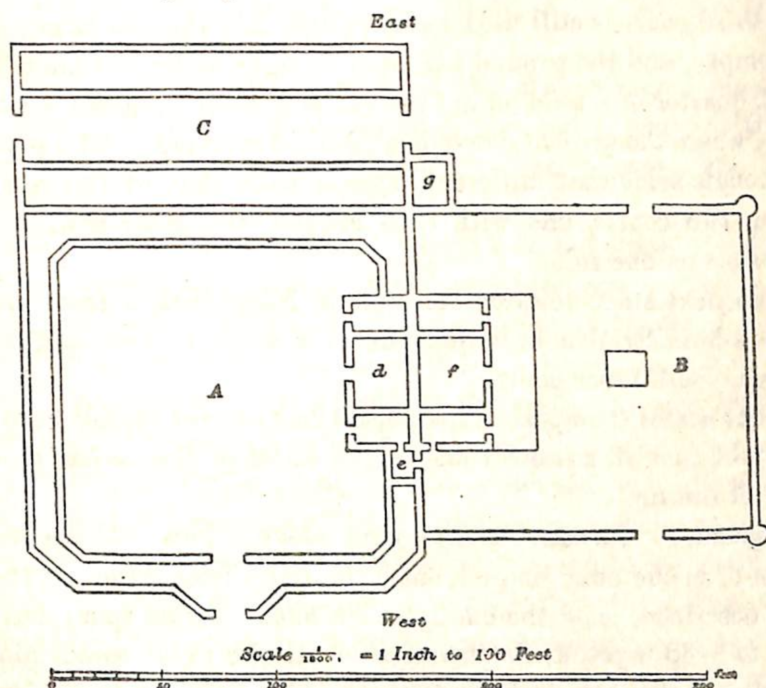
Placed, as this town is, at the beginning of the hills, it is the starting point in the mountain journey between the plains and Kashmir by the old royal road. When the Mughal Emperors of Delhi used almost yearly to visit Kashmir they commonly followed this route by Bhimbar and the Pir Panjāl, and at this day English travellers use it as much as or more than any other.

Here, and at almost every stage on to Sirīnagar, are remains of *sarāes*, or rest-houses, built for the royal camp.

At Bhimbar there was a greater variety and extent of accommodation provided than at most of the stages, for here the camp used to concentrate, and hence proceed by detachments along the difficult hill-road, where means of carriage were and are limited. First, in the higher part of the town of Bhimbar, there is a sarāe built of brick and sandstone, a square of about 300 feet. On each of the four sides are seventeen double cells or rooms with dome roofs, the inner room 10 feet square, the outer one 10 by 6; the height of these rooms is 10 feet at the upper end of the building; those opposite, which are built on lower ground, are made some feet higher, so that the wall is kept of one level. The outside wall

is carried above the roofs and forms a parapet. In the middle of the quadrangle is a chabūtra, or raised masonry platform; close outside the gate are the ruins of a mosque.

I do not think that this sarāe was intended for the king himself, for there are no rooms larger than the rest. Down in the plain, where the present Travellers' Bungalow is, are remains of what I have little doubt was his own halting-place. There was a square enclosure (traceable by a few remnants of the wall); in the centre of one side of it was a suite of rooms raised above the level of the ground, with a terrace in front; there were other buildings in the middle of the two next sides of the square; in the centre was a chabūtra or platform: close at hand was a *hamām*, a small building in three compartments, with an opening in the roof of each, made for the escape of the steam of the hot bath. These I believe to have been the royal quarters.



ROUGH PLAN OF THE SARĀE AT SAIDĀBĀD.

The next stage on the Kashmir road is *Saidābād*, near the village of Samānī. Here is the finest example of all the royal

sarāes; a rough plan of it is annexed. It has three divisions: the great court, A, is entered by the chief gateway; on all sides of this quadrangle are the small arched or vaulted rooms, and, besides, in the middle of the south side is a set of three larger rooms on a higher level, marked *d*. These are now unroofed; I think there had been an upper story above them: they were doubtless the king's rooms. From these a small passage, *e*, leads to a corresponding set of rooms, *f*, which, with a terrace in front of them, look on to the second courtyard, B. This must have been the zanāna, or the ladies' apartments, and their private garden; this quadrangle has no cells round it; the wall is plastered smooth inside. A third courtyard, C, not communicating with the others, has along each side of it a row of double cells. *g* marks the position of a small mosque.

The sarāe is massively built, and the vaulting has stood well. The third court is still used by travellers, but the two larger ones are empty, and the ground has been brought under the plough.

A quarter of a mile off are the ruins of another, rather smaller, sarāe, where the present Travellers' Bungalow stands. The plan of it, though somewhat different, agrees with that of the rest in having two courts, one with cells around, the other with but a few rooms on one side.

The next stage towards Kashmir is *Naushahra*, a town which is the administrative head-quarters of a district; here is a large old sarāe, with inner court.

Next comes *Changas*. This place I have never myself been to. I am told that it possesses one of the finest of the sarāes in the whole of the route.

Rājāorī, or *Rāmpūr*, is the next stage. This will be more spoken of in the next chapter, since the route from Jummoo, there to be described, joins the one from Bhimbar at this spot; but in order to keep together the mention of all the royal sarāes along the line, we will now enumerate those which exist on to Kashmir, even though this leads us beyond the Outer Hill area.

At Rājāorī the halting-place of the Delhi Emperor seems to have been the garden on the left bank of the stream. This is a

large oblong space, enclosed by a thick wall, and traversed by two stone water-ways at right angles to each other. There are two bārādarīs, that is, bungalows or summer-houses, one of which overlooks the stream, and looks on to the picturesque old town on the opposite bank. In former times there was a bridge leading across from the garden, as one can tell from some remains of its piers; though the stream is usually fordable at certain places, it is at times rendered quite impassable by floods. At the corner, again, are some hamāms, or hot-bath houses.*

There is a sarāe, which doubtless was used by the king's followers, on the right bank of the river, in the town itself; this is now occupied for permanent dwellings.

A few miles above Rājāorī are two quadrangular buildings, one 50 yards square, the other 50 yards by 40, which are of the same time; these, however, are of another sort, they are simple enclosures with two entrances, and without any cells; very likely they were for stables.

At *Thanna* is a fine example of the Mughal sarāe (as these rest-houses, the work of the Delhi Kings, are called); in this, I think, the rooms are larger and higher than is usual, but fewer in number.

After this a stage is missed, where I do not know of any like remains, though I think there must have been some. The next is the high village of *Poshiāna*. Here are some remnants of a sarāe that was not so well finished as those lower down, nor of such a size; for here there is not much flat space for any building; there is little room even to pitch one's tent.

Across the Panjāl Pass, by the roadside, are a few small shelter-houses, consisting of two or three arched cells, which must often have been of service to wayfarers, who might, by making the journey too early or late in the season, expose themselves to the risk of a snow-storm. Soon after these we came to *Alīābād sarāe,* which is one of the few of those that still are used for the original purpose of shelter for travellers. In its bleak position, at an

* In this garden are some fine chīnār or plane trees; the altitude, about 3200 feet, seems the lowest at which they will flourish.

elevation of 9700 feet above the sea, it is indeed useful, and it is often well filled.

The remaining sarāes, and these are on the Kashmir side, are at Dubchi, at Hirpūr (a much ruined one, of good size), at Shāhjumarg, 6 miles beyond Shapeyan (as mentioned in Dr. Ince's 'Handbook to Kashmir,' I have not myself seen it), and lastly at Kahnpūr, 12 miles short of Sirīnagar.

The positions of the sarāes were well selected; they were well spaced; nearly every one of them was placed where to this day are the common halting-places for travellers.

Returning from this excursion on the line of the Kashmir road, we will just look at a few more places in the Outer Hills.

At the village of *Samānī* is an old temple, much ruined, but still showing traces of fluted columns and trefoil arches; it is of much the same architecture as the temples of Babor. At the time it was built the people of these parts were doubtless still Hindū; perhaps, indeed, it dates from a time earlier than the beginning even of Muhammadanism.

Mīrpūr is a good large town; it must be the next after Jummoo in size among those in the Outer Hills; it is on a plateau much cut into by ravines. The place is a flourishing one, from, I think, its being a centre, or a place of agency, for an export trade in wheat that is carried on by the Jhelam River from these hills to the places in its lower course. Some spacious houses belonging to Khatrīs must have been built from the profits of this trade.

Pūnch is a place of more than common importance. It is the seat of Raja Motī Singh, who, under the Maharaja his cousin, holds a considerable tract of country in fief.

In the time of the Sikh rule in the Panjāb, when the Dogrā brothers divided among them the hill region, and held it tributary to the Sikhs, Pūnch was the share of Raja Dhiyān Singh. After his death, Jawāhir Singh, his son, held it; but his position was not recognized as independent of Jummoo in the treaties of 1846; hence he became a vassal of his uncle Maharaja Gulāb Singh. Later, some differences and disturbances occurred, which ended in Raja Jawāhir Singh having to leave the country, and Raja Motī

Singh, his brother, succeeding him at Pūnch, now rules there in obedience to the Maharaja.

Pūnch is a compact town, with a good bazaar; it is situated at the meeting of two valleys, which make a wide opening among the hills; the valley itself being somewhat over 3000 feet above the sea, we are here in a part that may be reckoned to belong either to the Outer Hills or to the Middle Mountains. There are here a fort and palace, lately added to and improved with much taste by Raja Motī Singh.

A word or two as to the hill-forts of this region.

All over the low hills, on both sides of the Chīnāb, they are in extraordinary number. They were built at the time when each little tract had its own ruler, and each ruler had to defend himself against his neighbour. These forts are commonly on the summit of some rocky hill, with naturally-scarped face; by their position, and by the way they were planned, they are well protected against escalade. Though now they have all come into the hands of one ruler, they are still kept up, that is so far that a small garrison—may be only of a dozen men—is kept in each. Some of the most known are Mangla, on the Jhelam; Mangal Dev, near Nanshahra; and Troch, near Kotlī; these are each on the summit of a rocky precipitous hill most difficult of access.

CHAPTER VI.

REGION OF THE MIDDLE MOUNTAINS.

RĀMNAGAR TO BHADARWĀH — BHADARWĀH — PĀHARĪS; OR DWELLERS ON THE MIDDLE MOUNTAINS — GADDĪS — GUJARS — VALLEY OF THE CHĪNĀB — KISHTWĀR — KISHTWĀR HISTORY — KISHTWĀR TO PĀDAR — PĀDAR — PĀDAR HISTORY — BHUTNĀ — MIDDLE MOUNTAINS OF THE WEST.

THE phrase "Middle Mountains," which heads this chapter, is one that I have adopted for convenience, to denote both a certain tract and a certain character of mountain. I am aware that it is not capable of exact definition, still I find it useful to effect in a rough way the purpose above indicated.

The Middle Mountains are those which occur between the Outer Hills and the high ranges. They begin (reckoning from the plains) along a line that starts from a point 8 or 10 miles north of Basolī, and runs along just north of the towns of Rāmnagar, Riāsī, and Rājāorī; thence its course is less definable, but it takes a general north-westerly direction towards Muzafarābād. The northern boundary of the tract is made by the two lofty mountain ranges (or the two divisions of one mountain range, whichever they may be considered), one of which, coming from the south-east, ends off at Kishtwār, while the second is the Panjāl ridge which overlooks Kashmir.

The width of our tract between these two boundaries is as much as 40 miles on the east; from that it gradually lessens to 10 miles near Rājāorī; towards the north-west it again spreads, and then, as before said, has less definite bounds.

This space is occupied by a mass of mountains, cut into by ravines, or divided by more important but still narrow valleys, with hardly one wide flat space, whether plateau or valley-bottom. Its elevation is in general between 4000 and 12,000 feet; some few valleys reach below, and some peaks rise above those limits.

The form of the mountains bears a great contrast to that of the

Outer Hills. These were shown to be ridges more or less parallel, separated by flat valleys, sometimes narrow sometimes wide, with the main lines of drainage cutting across, that is, through, the ridges. On the other hand, the Middle Mountains are ridges of varying, irregular, direction, that branch again and again, like the twigs of a tree; the chief ridges are at the same time the more important watersheds.

Looking from a geological point of view, we may say that there is not the same correspondence between the direction of the ridges and the strike of the beds as there is among the Outer Hills.*

The elevation of these Middle Mountains is sufficient to give a completely temperate character to the vegetation. Forests of Himalayan oak, of pine, spruce, silver fir, and of deodar, occupy a great part of the mountain slopes; the rest, the more sunny parts, where forest trees do not flourish, is, except where rocks jut out, well covered with herbage, with plants and flowers that resemble those of Central or Southern Europe.

Cultivation has been carried to almost every place where it is practicable. Wherever, within the altitude that limits the growth of crops, the slope of the ground has allowed of it, the land has been terraced, and narrow little fields have been made, these settlements sometimes being of extent enough to support a village, sometimes sustaining but one or two families.

Here, as in the Outer Hills, the tillage does not depend on irrigation, but on rain; these mountains, indeed, get the best of the Monsoon or rainy season; it is seldom that they suffer from drought, more often they suffer from an excess of downfall. Still the rainfall is not enough for the growth of rice; for this irrigation is wanted, but only in a few places can it be obtained; hence that crop is comparatively rare.

It is only in the very lowest parts of this region that two crops can be got from the same land. The times of growth of the two kinds of crop—of wheat or barley on the one hand, and of maize, rice, or millet, on the other—in most parts overlap each other to

* This contrast is noted, with regard to a similar tract farther east, by Mr. H. B. Medlicott, in 'Memoirs of the Geological Survey of India,' vol. ii., part 2, p. 6.

an extent which varies with the height above the sea. Hence the wheat does not ripen till it is too late to sow maize or millet. But some land being reserved for the first kind of crop and some for the other, they have, in a sense, two harvests.

Snow falls over all the tract. In the lower parts it just falls and melts; but in most it stays for months, and in some as long as five months. It is this circumstance of duration of snow that causes great distinctions between the inhabitants and the customs of these hills and of the Outer Hills, some details of which will be found farther on.

The further account of the region can best be given by taking for examples and describing some of those parts which I am most acquainted with.

RĀMNAGAR TO BHADARWĀH.

A march from Rāmnagar to Bhadarwāh, Kishtwār, and beyond, gave me an opportunity of seeing much of this mountain tract.

Near behind Rāmnagar, which itself is counted in the Outer Hill region, rises a bold ridge. This, which can be traced on the large map, is the first of the Middle Mountains.

The road or path over it—one not fit for horses—rose up a long spur that projected from the ridge, till we crossed this at a height of about 8000 feet. The range keeps at this elevation and continues straight for some 25 miles. On the south side it has a succession of such spurs as the one we came up; they first jut out from the ridge at a low angle, then, leaving a high shoulder, the slope becomes more sudden; lower down again it changes to various degrees of steepness, which allow of the ground being in places terraced for cultivation. Between every pair of the rounded spurs is a hollow or ravine, each the bed of a stream of no great volume, but perennially flowing.

The surface of the ridge and of the spurs changes. Rocks here and there project; the less steep portions are covered with pasture when facing the south, and with forest on the sun-sheltered slopes; the forest may be of oak, with rhododendron and horse-chestnut among it, or, higher up, of deodar and pine.

From the summit of this ridge, looking northwards, we see across the upper valley of the Tavī on to another ridge of fine massive mountains, rising to rocky but not sharp-pointed peaks, which are 10,000 and 12,000 feet in height. From this range come branches bold in outline; upon them can well be seen the alternation of forest and pasture land, and the sharp ending of the trees along the central line of each spur, where the aspect of its two slopes with regard to the south differs enough to produce that effect on the vegetation, the growth of wood always keeping to the more shady part. The general look of the hills reminded me of the Black Forest of Germany, of its darkly-wooded slopes and bare summits of the higher mountains.

A path led down into the valley of the Tavī River through a fine forest of spruce and silver fir (*Picea Webbiana*), and deodar trees, with sloping glades of fresh grass, dotted with the young trees in such fashion that one might have thought one was in a well-cared-for shrubbery.

In the valley we came to a village named Thilrū, on a plateau about 200 feet above the level of the Tavī River, surrounded close by the hills, and shaded by walnut trees; this is at a level of about 6600 feet. In the deep channel below the river foams along among large boulders, confined by rocks that are capped with a deposit of alluvium of rounded blocks of gneiss embedded in earth. These banks are in part clothed with shrubs and trees that have found a footing upon them. Just opposite a beautiful little cascade is made by a side stream jumping in stages down the chasm it has worn for itself in the rock that confines the larger river.

The General Map will show that the two ridges—the one we crossed over, and that on the north side of the Tavī Valley—come round and join some 10 miles above the village of Thilrū, and that the river rises in the space thus enclosed. Our way was to follow up the stream to its head, and, crossing the watershed, to drop down on the other side to Bhadarwāh.

The path, which kept the valley, was among deodar, silver fir, and spruce fir, with some pines of the species *Pinus excelsa*; each of these showed to perfection the beauties of their foliage; the

pine-needles hung in light feathery sprays, the spruce boughs in graceful curves, with which contrasted the almost geometrical regularity of the silver-fir branches. The deodar is here, and wherever on the Himalayas I have seen it, much more like a Lebanon cedar than the trees, still young, growing in England would lead one to suppose; the bending form of the boughs, as well as the particular light tint of green of the leaves of the young plant, are lost as the tree gets on in age, and the branches come to jut straight out and to make flat dark-leaved layers.*

Following up the valley, often we met with the river roaring among boulders and over rock-ledges; anon the path crossed it by a bridge, and rose on the right bank for some 1500 feet, and afterwards went along high above the stream. Here we came upon snow. It was the beginning of May—hot summer in the Plains and Outer Hills, spring in the region just past, but we came, as it were, to winter in rising. Across the valley we looked on to a snow-clad slope of some 4000 feet of height, whose summit was a rock-mountain of 13,500 feet. The lower half of that slope was covered, in lines following those sides of the indenting hollows whose aspect was favourable to forest trees, with thousands and thousands of tall straight conifers in dark green foliage, that threw their grey shadows over the bright snow. As the path led on and the valley rose, the bank that faced us becoming nearer, we saw each tree to stand in a hollow in the snow, for this being old, not of a late fall, had both quitted the branches and melted from around the trunks, though still thickly carpeting the space between. On the north side of the valley we were able to find a clear space for the tents to be pitched, the altitude of this camp being 9500 feet.

We had now reached ground of somewhat different character; we had come to a part which the natives call Seojī; it is the

* The names which these trees here bear are—silver fir, *rān*, or *ren* (with a nasal *n*); spruce fir, *tos*; Pinus excelsa, *chū*, or *kadūr*; deodar, *dyār*. I think that the names *rān* and *tos* become interchanged not very far off. Dyār is the name used for deodar both in the Panjāb (where its wood is well known) and in these hills; but in Kashmir it is called *deodār*, the *e* being pronounced, according to the rules given in the preface, like the *a* in the English word "date."

upland space enclosed by the meeting of the ridges, where the Tavī has its source. At this high level there is a spread of gently undulating ground, with rounded knobs and smooth dells, a space pleasant to meet with after the steep slopes and narrow valleys. The higher hills had retired. As one viewed them from the top of some of the mounds, one saw a great difference in the look of those on the north from what we had seen on the south side of the valley. On the north was an amphitheatre made by rugged mountains of grey rock with snow-fields beneath; below the snow the amphitheatre enclosed a thick forest of alpine oak. This I saw when the evening sun was brightening the rounded masses of its foliage, from the midst of which rose here and there the straight forms of some dark fir trees.

The oak, *Quercus demicarpifolia*, in the native language *kreū*, is at this point the highest forest tree. Unlike the conifers, it flourishes on hills that have a south aspect; it grows certainly as high as 11,500 feet, and I think it reaches to close on 12,000 feet; of the firs the limit was only a little above 11,000 feet.

The depth of snow prevented my verifying the thought which came to me on seeing the undulating hillocky ground of this enclosed upland, namely, that the irregularities of its surface were the moraines and *roches moutonnées* of former glaciers. The end of May or June would be the time to follow up the inquiry, as the snow by then would have melted. The stream which we had traced up now divided. I was told that the southern branch came from a little lake called Kallī Kund. This strengthens the idea of glacier-traces, for mountain-lakes have often been caused, in one way or another, by the action of glaciers.* The G. T. Survey have marked the highest summit near—that at the meeting of

* What appeared to me to be other signs of former glaciers, not very far from this, are the masses of rock which lie in lines in the Bhadarwāh Valley. The large blocks, mostly of gneiss, are sometimes as much as 40 feet long and 25 feet high; they are among an agglomeration of angular and rounded pieces of gneiss and slate. The heaps of the larger masses are seen to be arranged in curving lines, as the side valley they came from bent round to join the main one. I am not quite sure of their being moraines; avalanches perhaps may have had to do with forming them—avalanches of the kind that later on, under the head of Pādar, will be described. The linear heaps extend below the level of the town, to, say, 5300 feet above the sea.

the ridges—as 14,241 feet; it does not bear perpetual snow, but there is a very constant bed near, whence snow is sometimes sent for summer consumption to Jummoo, after being compressed by beating.

The other branch stream we followed to its source. The way led us to a part of the ridge that was depressed, when a few hundred feet of steeper ascent brought us to the Pass, which is 10,900 feet above the sea. The ridge it crosses bears the name of Seval Dhār. This Pass is closed by snow for three months from the middle of December; later in the season than we came it would be practicable for ponies, which, however, would have to be taken up the valley by a somewhat different road than ours.

The gaining of the summit opened to us a magnificent prospect as we looked beyond. On the right was the high peak, on this aspect brilliantly white with snow; from this mountain juts out a mighty spur, whose sides, that descend full 5000 feet, are clothed most thickly with fir forest. Spurs from other parts of the range make long ridges with dividing valleys; their sides, though not rocky, are steep-sloped, some parts of them grassy, some parts dotted with trees, and some completely covered with wood. Where these spurs end off, runs along nearly at right angles to them the Bhadarwāh Valley, a flat gently sloping to the north-west. The town and village that occupy it are in sight. Beyond that again rise hills like what we have near us, dark forest ridges, their spurs part grassy, part wooded. These are branched in such complication that their connection cannot be made out except by studying a map of them. Last beyond—seen clear over these ridges, stretching far right and left along the whole of the space visible between the near jutting hills—is a great snowy range, the one dividing Chamba from Pāngī, the continuation of which reaches to Kishtwār. It is a serrated rocky line, with wide snow-fields in front of it, part of which is permanent snow. Some lofty sharp-pointed peaks rise from the general level of the range; of these one has much the form of the Matterhorn. The higher mountains of this ridge measure 17,000 and 18,000 feet.

Down from the Pass was first a steep descent, which the snow

made difficult for the laden men, and then a more gradual slope along a spur, through a forest of the same sorts of conifers. The spruce and silver fir flourish most in the high parts, while lower down the deodar and *Pinus excelsa* are most numerous. The trees, as a rule, run to a height of 100, 120, and 150 feet; many are wonderfully straight. In the descent of several thousand feet such as we were now making the changes in all kinds of vegetation are very striking; first below the snow were great bunches of different sorts of primulas; these farther down gave way to other flowers of great variety; deciduous trees gradually became more frequent, and with their fresh spring colours among the dark foliage of the conifers gave new beauty to the forest.

BHADARWĀH.

When we had descended more than 5000 feet we reached the valley of Bhadarwāh. This is a nearly flat-bottomed valley, a mile in width; in length it extends thus open for about four miles, above and below narrowing so as to leave hardly any space between the hill-slopes. The hills which bound it are the ends of spurs from the forest ridges. Some of these spurs have bits of cultivated ground at different levels, and in some places we noticed traces of former cultivation—terraced ground overgrown with young pines, of twenty years' growth or more.

The valley-bottom has a slope of about 3°. The land is terraced to this fall in steps of a few feet each, so as to fit it to receive the irrigating water that here is plentiful enough to provide for a crop of rice. For this, in the month of May, the people were busily preparing, both by ploughing and breaking up the ground with a heavy kind of hoe or mattock. Men and women combined, in gangs of ten or a dozen, were working over the fields, shoulder to shoulder, striking in regular time, and beguiling the hours by singing as they worked a monotonous but not unpleasing chorus. The process that follows — and this, being lighter labour, has not the same accompaniment of song—is pounding the clods with what are exactly like croquet-mallets;

after this a little rain is waited for, that the earth may crumble and become fit for watering and putting in the rice.

Among these mountains the months of winter, with snow deep on the ground, make it necessary for the peasant to lay in a good store of fodder for his cattle. Nowhere do the natives of India or the Himalayas seem to have learnt the advantages of making a large rick. Perhaps the holdings are too small, and co-operation in such a matter has not been arranged. In the neighbourhood we now are in they have two or three methods of storing the grass, which itself is plentiful on the slopes in summer. Sometimes they fix a series of poles upright in the ground in one line, and make a rough thatch over a ridge-pole at top, and then pile up the grass between and around the sticks. Another plan is to twist the grass into a loose rope and throw this over the forks of trees, where, hanging down, it is uninjured by the snow that falls, and is easily pulled off when wanted for use.

The town of Bhadarwāh is a busy, and, for such a hill country, a comparatively large place. I estimate that there are 600 or 700 houses, and about 3000 inhabitants. It is built almost entirely of deodar wood; the frame-work of the houses is altogether of wood; only between the double plank-walls the spaces are filled in with stones, sometimes laid loose and sometimes cemented with mud; most of the houses have a sloped shingle-roof. There is a curious plan of building up pillars for the corners, and sometimes for the middle supports, of the houses and the temples. Square slabs of wood a few inches thick are placed upright in pairs, one pair being surmounted by another at right angles, and so on alternately.

Bhadarwāh has an open market-place, a long straight street leading to the Fort, two or three other bazaars, two mosques, and a large temple. The waters of one of the streams come through the very middle of the town, and branches from it are brought through all the streets. Both in among the buildings and all round the place fruit-trees are growing—apple, pear, mulberry, apricot, and cherry, and there are poplars, and a few chīnār or plane trees.

These characteristics, combined with the presence of numbers of Kashmīrī people who live in the town, have gained for it the name "Chotā Kashmīr," or Little Kashmir.*

More than half of the inhabitants of Bhadarwāh itself are Kashmīrī; these quite throw into the shade the original Hindū inhabitants; they have adopted almost all kinds of employment, numbers of them are shopkeepers, and numbers more are occupied in making shawls, on orders from Amritsar and Nurpūr. Some Kashmīrīs have land, and cultivate it themselves; some, indeed, do this for half the year, and follow shawl-weaving for the other half—during the long snowy winter. Around are several villages of Kashmīrīs; but here, outside the town, they are much outnumbered by the Bhadarwāhīs, the older inhabitants. I could not find out at what time so many Kashmīrīs settled here, but, from the absence of any distinct tradition on the subject, we may conclude that it was at least three or four generations ago.

An elevation of 5400 feet above the sea gives the place at this time of the year an agreeable temperature, that makes it a favourite with many. Sometimes Gurkhās from the British regiment at Bakloh, bringing their wives and families, spend their leave at Bhadarwāh, where they can get the advantages of fine air and cheap living.

On a spur, some 300 feet above the town, is the Fort, a square building of combined wood and stone, with bastions of masonry work. Near by are some remains of the former residence of the old Rajas. The Rajas of Bhadarwāh were Miān Rājpūts; they were allied, as to caste, with the families that ruled over Basolī and Kulu. This old family was dispossessed about the year 1810 by the Chamba family, who thus combined Bhadarwāh and Chamba. These others held it for twenty or thirty years only, when, through two or three stages of transfer, it fell into the hands of Gulāb Singh, of Jummoo.†

* Another name (which the Hindūs sometimes give to it) is *Bhadarkāshī*, derived, I think, from the sacredness of a shrine there is on the river-bank opposite.

† One account shows Bhadarwāh to have passed from the Chamba family, by way of dowry for one of the daughters of that family, to Raja Hīra Singh, nephew to Raja Gulāb Singh. A short interregnum followed on Hīra Singh's violent death;

PAHĀRIS, OR DWELLERS ON THE MIDDLE MOUNTAINS.

Having thus tried to give some notion of what is a fair specimen of the Middle Mountains, I propose, before speaking of any more places in particular, to say something about the inhabitants.

These I shall call by the same name, "Pahārīs," as is given them by their neighbours; for although, as explained in the introductory chapter, the word, meaning "mountaineer," is itself indefinite, yet it is restricted by the Dogrās to these particular races, and as there is no general name among the people themselves corresponding to what I want to express, I do not think we can do better than adopt it.

The Race Map shows the Pahārīs to extend over the tract I have called the Middle Mountains only as far west as Budil, in the valley of the Ans; as to the part of that tract to the west and north-west, the people have already been described under the head of Chibhālis; the Muhammadanising of that country of Chibhāl preventing us from separating all the races that may have existed distinct in former times.

The space, then, coloured Pahārī on the Race Map, is occupied by mountaineers who have remained Hindū. Over the whole of it the people have a general resemblance. They are a strong hardy race, of good powerful frame, but still active; they have a straight forehead, good brow, with a nose markedly hooked, especially among the older men. Among the people round Rāmban I noticed a special form of narrow nose, bent over with a peculiar curve. Their black hair is allowed to grow to their shoulders; their beard and mustache are thickish, but the beard does not grow long.

The men all dress in a light grey thick woollen cloth, which is made in almost every house.* In some parts they wear a short coat, in others a long and full one, hitched up by a kamarband, or waistband, of a woollen sort of rope, wound many times round. Their pyjamas are loose down to the knee, but below that fit

this was brought to a close by Gulāb Singh sending a small force to assert his right as head of the Jummoo family; his troops met with but little resistance, and the principality was annexed to Jummoo.

* Pattū (puttoo) is the name for this coarse homespun cloth over all the hills and in Kashmir.

close; this is a very good form for hill countries.* Their cap is of different shapes, sometimes a skull-cap, more often one with side flaps. Lastly, a lūī (looee) or blanket, of the same cloth, worn in many ways according to the occasion, enables them to withstand all the severe weather they are exposed to.

The women have a long gown of the same homespun, and, like the men, wear a kamarband. In some parts the gown is of nearly black cloth instead of grey. Sometimes they wear a low round red cap; near Rāmban the women have a peculiar tall one.

The caste that among the Pahārīs prevails in numbers far over others is the Thakar, which was mentioned as occurring among the Dogrās. The Thakars, indeed, have nearly all the land in proprietorship; they cultivate for the most part their own land; they are the peasantry of the mountains, as the Jats are of the Panjāb plain.

The low castes, Dūm and Megh, are scattered about everywhere; they dress in the same way as the others, and have acquired something of the same general appearance, but are not such large men, nor have they as good countenances.

GADDĪS.

At the south-east end of this region, where it borders on the Chamba country, there is a race called Gaddīs (or Guddees), who seem to have come at some time or other from the Chamba Hills. They are Hindūs, and have the same subdivisions of caste as the others, but they do not keep their caste rules so strictly. They possess large flocks of sheep and herds of goats, and they migrate with them to different altitudes according to the season. When snow threatens on the higher pastures they descend, coming in winter to the Outer Hills, and even to the edge of the plains. In spring they turn their faces homeward, and step by step follow the returning verdure, by June reaching the highest pastures and the hamlets, where some of the family had kept warm their home.

In the upper valley of the Tavī, which was lately described, live

* See the cut on the next page of some men of an allied race (the Gaddīs mentioned below), whose dress is the same as that of these Pahārīs, except as to the cap.

some Gaddīs in communities of their own, with their own headmen, in small villages separate from those of the other hill men.

The relationship of these Gaddīs to the other Pahārīs cannot be a distant one. In physique they closely resemble the people we have described. It is likely that whatever peculiarities they possess have been acquired by specialisation of occupation through some centuries.

In dress they have one striking peculiarity in their hat, made of a stiff cloth, which is of a form indescribable, but it is well



GADDĪS, FROM A PHOTOGRAPH.

shown in the accompanying cut taken from a photograph. This gives a fair notion of the features of the Gaddīs, as well as of their dress, which, as stated before in the note, is the same as that of the Pahārīs, except as regards this peculiar hat.

As to the language of the Pahārīs, many separate dialects are spoken; every 20 miles or so will bring you within hearing of a new one. Places no farther apart than Rāmban, Dodā, Kishtwār,

Pādar, and Bhadarwāh, have their own speech, which, though not incomprehensible to the people of the neighbouring place, still is very distinct from theirs. Counting all these together as Pahārī dialects, we may say that between Pahārī and Dogrī there is so much difference as to make Pahārī incomprehensible to a man of Dūgar. More will be said on this subject in the chapter on Language.

Gujars.

There is another race who spend half their life on these mountains and half at lower altitudes, namely the Gujars.

Unlike the Gaddīs (who are really hill people, and only for a few months at a time visit the lower parts), the Gujars have their homes below; they are only summer visitors to the mountains. Since they were omitted from what was said about the inhabitants of the Outer Hills, they may fairly find a place here.

These Gujars are a set of people who are found scattered at intervals over the country between Delhi and the Indus. In these parts which we deal with they have their homes in the plains outside the hills, here and there among the lower hills, and in some valleys among the higher mountains. Sometimes they occupy a village by themselves; sometimes they share it with others; but even in that case they remain a very distinct body. Though holding some land, they do not chiefly depend on it for sustenance, for they are a migrating, pastoral tribe, who seek for their herds pastures in various parts at different levels, and live mostly by the produce of their cattle.

I agree with Sir George Campbell that they are an Aryan race; but their countenance cannot be called high Aryan. Their forehead is narrow; they want the well-formed brow of the finer races. The lower part of the face is narrow also; but the nose has always something of the curve, as is often seen in Aryan nations. Some I met with had lighter eyes than are common among the other tribes of the country, and, generally, as compared with the people we have hitherto had to describe, their beard was scant. In figure they are tall and gaunt; in motion slow and ungainly. They are rather surly in disposition, having that

kind of independence which consists in liking to be left alone and to have as little as possible to do with other races. When, however, one does come in contact with them, they are not bad to deal with.

Those who live down below and come up to the Middle Mountains for the summer dress somewhat scantily; they have loose short pyjamas; the upper part of the body is often bare; but there is a lūī, or blanket, in reserve, which is commonly put over the head, and hangs down behind. Those who are settled farther among the mountains (and these Gujars are found in Kashmir, if not beyond,) adopt a dress more like that of their neighbours, better suited for severe weather.

Wherever I have met the Gujars, I have found them to be possessors of herds of buffaloes, and to drive these, as the spring and summer advanced, into the higher mountain pastures. In the beginning of May I met many about Bhadarwāh who had just arrived from below; they had with them their wives and families, spinning wheels, churns, and other helps for getting a living. Their gains are derived chiefly from the sale of ghī, or clarified butter, the preparation of which occupies them continually during their stay among these summer pastures. They are generally in communication with traders of the towns below for its sale, having often, I think, received advances in anticipation of the season's yield.

Their language is not the same everywhere; that depends on the country they are settled in—not that which they come to in their summer wanderings, but where their house, their winter home, is. Thus there are Gujars in Kashmir who speak Kashmīrī, while those who come to the Middle Mountains speak a mixed dialect of Panjābī, or Dogrī, and Pahārī. These have, however, some words peculiar to themselves. I heard the following half dozen in the mouths of some Gujars, from near Budil, which may be worth preserving:

Mother	ālī.	*Son's wife*	ban.
Sister	bebe and idhī.	*Husband's sister*	nand.
Son	gadarā.	*To milk*	melna.
Daughter	gadarī.	*To be milked*	milna.

As to religion, all I have met—all who live within these territories—are Mussulmān.

VALLEY OF THE CHĪNĀB.

In reaching Bhadarwāh we had entered that portion of the Middle Mountain region which drains directly into the Chīnāb, and we will now take a general view of the country that constitutes the valley of that river, so far as it flows in this particular mountain-tract.

The Map shows that the ridge we last crossed stretches from near Bhadarwāh in a direction a little north of west for more than 50 miles, as the crow flies, while the length measured along its sinuosities would be a good deal more. Points on this ridge are 12,000 feet high, but 10,000 is its more general elevation. While the higher parts are rocky, other portions of its summit are rounded and grass-covered, with rocks showing only here and there. At the western end, towards Riāsī, the slopes of it are steeper and the edge narrower. The rock that composes it at this part is a massive and hard limestone. Near here a short branch goes off towards the plains, which culminates in a peak, that, viewed from below, shows a very marked triangular form, and is flanked by two others of similar shape. This bears the names of Trikhtar and of Devi Thār; near its summit is a spot that is a place of pilgrimage much resorted to by Hindūs from the Panjāb. In the beginning of the hot weather one every day sees passing through Jummoo numbers of people from the plains, mostly of about the rank of shopkeepers, on their way to this place, with their wives and families, the women mounted astride on a pony and supporting a child or two. An excursion of this sort for them corresponds to our trips to the seaside; and if they meet with more fatigue and rough work in the journey through the hills than is suitable to a pleasure trip, then the religious object of the journey enables them to bear disagreeables, which with us would likely be the cause of unrelieved grumbling.

From that long ridge branch out towards the north a number of spurs, which, like what they branched from, have but narrow

summits; nothing that could be called a table-land ever occurs. The slopes of these are often covered with fir forest, with the usual succession of species according to the elevation—spruce and silver fir at the very top, giving way, when one has descended 1000 or 2000 feet, to *Pinus excelsa* and deodar, and lower still, at about 5000 feet, to *Pinus longifolia*.

From the height of 6000 or 7000 feet downwards, one meets with scattered patches of tilled ground and with the isolated cottages or huts of the owners. Here and there, on the frequented roads, the houses are collected into a little village that boasts of a shop to supply the simplest wants of travellers.

All the space between the ridge and the river is taken up by such spurs alternating with ravines; the vertical distance is some 7000 feet, the lower part of the slopes, that which overhangs the river, being often the steepest.

The Chīnāb is one of the great rivers of the Panjāb. It rises in the country called Lāhol, in two streams, the Chandra and the Bhāga, the joining of whose names into Chandrabhāga make the word by which the combined river is often known among Hindūs. The other name, Chīnāb, which is more usual, has, I think, the derivation that is so obvious and is commonly given to it, namely, Chīn-āb, the water of China, which name probably was given by the Muhammadans from a notion—by no means far from the truth—that it came from Chinese territory; for the sources of the river are very near to ground that was tributary (though by two removes) to China, and the tract it first flows through is inhabited by the Lāholīs, who are allied to the Chinese in speech, look, and religion.

The river after leaving Lāhol (which is now under British authority) passes through Pāngī, a part of the Chamba territory, and enters that of Jummoo in the district called Pādar. From its entrance into this onwards it flows for 180 miles through such country as we have been describing—some more detail of which remains yet to be given—and then for 25 miles through the Outer Hills, before it debouches into the great plain.*

* Details of the course and volume of this river will be found at p. 117 of Cunningham's 'Ladak.'

In this course occur three marked bends; sharp changes of direction that affect for many miles the course of the river. The first is where it rounds the space of ground occupied by Kishtwār; in doing this it makes an acute angle, having first flowed somewhat north of west, and then, below Kishtwār, going a little to the east of south. The next great bend is at Jangalwār, where it changes suddenly, from a southerly to a westerly course, a whole right angle. The third is at Arnās, where, from flowing west, the river gets to flow south.

Doubtless these changes have a meaning; that is, they are to be connected with some cause to be looked for in the origin of the valley and the geological structure of the country. We will not here enter on such speculations, but will only point out one or two facts that belong to physical geography. At each of these bends, opposite to the salient angle, a large stream joins the main river. At Kishtwār it is the Wardwan River; at Jangalwār it is the considerable stream (called Khāl Ne) that drains the Bhunjwār and other valleys; at Arnās the Ans River flows in from the north. Again, at each of the bends the main stream seems to turn round the end of, or else to cut through, a range of mountains it had been flowing nearly parallel to. In the first case the range is the lofty one lying on the south-west of Pādar; in the second case it is a branch from the mountains enclosing Kashmir; in the third case the main river may be said, immediately after its bend at Arnās, to go through the steep limestone range.

There is another intermediate bend, not so marked as these three, which yet has these same circumstances. A few miles below Rāmban the Chīnāb changes its direction, makes a rather obtuse angle; in doing so it turns round a spur (on which is the mount called Singipāl) from the ridge we have described on the south of the river, and at the bend the Banihāl stream from the north joins in.

In considering the Outer Hills we saw how the Chīnāb flowed through them, and the character which they gave to its banks. Tracing the valley upwards, we come to the Middle Mountain region just above the town of Riāsī. Here the river is flowing

in a very sinuous course between steep inaccessible rocks; great eddies are produced in the curves of it. For several miles the gorge is impassable in any other way than on a raft of two or three large logs lashed together, and this is by no means a secure mode of traversing it. I heard of one or of two men, I forget which, who, in following their calling of collecting timber, had ventured into the gorge, and their raft had been caught in one of the eddies, and been carried round and round between the impracticable cliff and the main current, in such a way that no efforts of the men could disentangle it; and so for days the raft went round bearing its helpless burden, who, at last, when nearly exhausted, were saved by the chance arrival of some others of their trade, by whose aid the first were freed from their watery prison.

On one of the projecting rocks, nearly surrounded by the deep waters of the river, is built a fort called Dhiyāngarh, named after Raja Dhiyān Singh, and farther up are the forts of Salāl and Arnās, on opposite sides. Above the falling in of the Ans River the banks are more accessible; the footpaths that connect the villages, which at intervals occur in the valley, sometimes go along near the water-side, and sometimes have to leave it for a bit where rock-cliffs some hundreds of feet in height bound it.

I have not passed along the whole of the course of the river, but have crossed or touched it at various points. Rāmban is a place near where the Jummoo and Kashmir road crosses it by a wooden bridge of considerable span. Here the river is about 2400 feet above the sea; the village is on a terraced plateau a few hundred feet above it. Above Rāmban the mountains rise boldly on both sides of the river, with sometimes a rocky and sometimes a grassy slope; the stream flows in a narrow channel between them, often with a great depth of water. In this part is Gajpat Fort, a small work on the right bank, crowning a sugar-loaf hill whose sides have a slope of 40° or 45°. Farther on is Doda, fort and village; a place I have never seen.

The character of the mountains on the north side of the Chīnāb can be seen in one view from the opposite mountain. As one climbs this, on the south side of the river, and at successive

heights looks back across the valley, the mountains on the north show out their whole form and grandeur. Behind Rāmban is a very distinct ridge, continuing for 15 miles at an average height of 9000 or 10,000 feet. From this ridge a succession of spurs come down to the river, separated by valleys which are little more than a mile distant from one another; at their mouths small tracts of land are terraced and often irrigated. The spur-sides are steep, but seldom rocky, the greater part of their surface is covered with herbage; some also is forest, but, from the general south aspect, not a great proportion; it is only where side-slopes give a more shady outlook that thick forest can be found, but over a good part of the rest trees and bushes are scattered.

Besides the cultivation low down near the river, patches of land have been brought under tillage all the way up to 7000 feet, after partial levelling and terracing. This is more common than anywhere else on the flatter tops of the spurs just above their last fall to the river, say at an elevation of 5000 feet. Such hill-side cultivation depends entirely on rain for its moisture, for water cannot be brought to such spots for irrigation.

Farther back, are higher, rocky, mountains that reach some 2000 feet above the forest limit; these make part of the range that bounds Kashmir; over a long depression in this the Banihāl road leads to that country. Farther west there are the ridges of Dainkmarg, Patal, and Sartali, all which have bold rocky summits.

The branch valley, in which flows the Banihāl stream, reaches up among these mountains. Along the bottom of it are evergreens and deciduous trees, making a beautiful and varied foliage. The steep hill-sides above have long-leafed pines scattered over them; among these the road leads us, cut into the bank in winding contours, high above the stream. Farther up the valley the road comes to the very side of the stream, which flows among fallen rocks, often rushing over them in rapids. As we go up we gradually leave behind the trees of the lower region, and get among those that frequent higher levels.

Following up the main river, the next place where I have

approached it is Jangalwār. Here the level of the water is about 3000 feet; the rock is of a character to affect the form of the river channel; some four miles above Jangalwār the river flows through a narrow gorge formed by massive rocks of a siliceous mica schist. The mountains that rise up from this make a narrow steep-sided valley; for a height of four or five thousand feet above the stream the general slope is 37°; and so, with the indentations of side valleys, it continues to near Kishtwār.

KISHTWĀR.

I first got sight of Kishtwār from an upper road, away from the valley road. The view pleased the eye by displaying a plain in the midst of the mountains, not perfectly level, but undulating, everywhere cultivated, dotted with villages. This plain, which is about four miles in length from north to south and two miles across, is bounded on the right by mountains, and in front beyond it were seen mountains; on the left, that is on the west, it was ended by a deep ravine where the river flowed, the farther bank of this again being formed by lofty rocky mountains.

To reach this plain or plateau we had first to descend deep into another ravine that bounds it on the south, and from that to rise again. The plateau is 5300 or 5400 feet above the sea. Unlike most of the flatter openings among the hills, it is not a mere plain nor a terraced slope, but it has little eminences and undulations; nearly all is under cultivation. The villages are shaded by plane-trees and by fruit-trees; leading from one hamlet to another are hedge-rowed lanes, with white and yellow and red rose, and other shrubs, flowering. By the town is a beautiful piece of smooth, nearly level, turf, half a mile long and a furlong broad, called the Chaugām, a place in former times kept for Polo playing, for which the carved goal-stones still remain, but now only common hockey is played on it; this place, too, has some fine chīnār or plane trees ornamenting it, and one massive but broken deodar-tree.

When one has been travelling over rough roads in a mountain tract, and has not for many days seen any level ground, the sight

of such a plain as this of Kishtwār gives one a peculiar pleasure; the secluded space, so well adorned with verdure and with flowers, and enclosed by great mountains, will from every one who sees it gain admiration.

As a rule, the mountains around are rocky below and have wooded slopes above; the wood is oak on the eastern hills, and deodar and fir on the opposite ridge. The mountain on the south-west of the plain is a remarkable one; it is separated from us as we stand at the western edge of our plateau by the river valley, which has been cut down to some 1300 feet below us; as we look across, a great cliff of some 3000 feet of height faces us, from the summit of which the ground slopes back to the wooded ridge. The most conspicuous and beautiful feature is made by the drainage from the upper part coming over the cliff in a waterfall of great height. Of this fall it is impossible to obtain a near and at the same time general view, but by going some way down the slope we get a fair sight of it, though at the distance of a mile or more. The water comes down not in one but many jumps; the aggregate height of the falls within view is about 2500 feet, and above these are a few hundred feet more, which can be seen from other points. The first two falls are each of about 500 feet; these are conspicuous from the town; below them are two or three small ones, making up six or seven hundred feet more; then there are irregular drops and cascades, partly hidden by vegetation and by the irregularities of the channel, these extending for some eight hundred feet to the river; thus the two and a half thousand feet are made up.

In this waterfall there is every variety of movement. In the greater leaps the water—although in volume not little, for the roar is distinctly heard at a distance of two miles—becomes scattered into spray; again it collects and comes over the next ledge in a thick stream; in parts it divides into various lines, which, at the distance, seem vertical, immovable, white threads. In the morning sun the spray made in the greater leaps shows prismatic colours, visible even at the distance of our chosen point—a phenomenon attributed by the people of the place to fairies who bathe

in and display the strange hues of their bodies through the shower. The cascade is in greatest force in the spring, on the melting of the snows above, and it was thus I saw it; from that time it diminishes, but it is again increased when heavy rain falls in the rainy season, that is, the late summer; in winter it is least.

The small town of Kishtwār is dirty and dilapidated. There are about 200 houses, including a bazaar with some shops; but there was a complete absence of life, of the busy cheerfulness one sees in some bazaars. The people seem to have been brought to a low stage of poverty from having in former years been given over to the Wazīr family, which still holds much influence here. Two large houses, built after the fashion of the houses of the richer people in Kashmir, which belong to that family, are exceptions to the general state of decay. There is an old fort, on a little rising ground, oblong, with corner towers and other projecting buildings: it is manned by some thirty men.

The inhabitants are more than half Kashmīrī; the rest are Hindūs of the Thakar, Krār, and and other castes. The Kashmīrīs here, too, carry on their shawl work; there are some twenty workshops for it in the town. In this place, as in Bhadarwāh, they seem to have settled for some generations.

The climate of Kishtwār is something like that of Bhadarwāh, but it is somewhat warmer, and must have a less fall of rain and snow. Snow falls during four months, but it does not continually stay on the ground; it may do so for twenty days at a time. On the slope towards the river, 1000 or 1500 feet below, it stays but a day. The fruits produced are apple, quince, three kinds of pear, plum, a few apricots, cherry, peach, grape, mulberry, and walnut.

KISHTWĀR HISTORY.

Kishtwār was governed by Rājpūt Rajas, who in early times probably ruled independent of all others.

The first whose name I can hear of is Raja *Bhagwān Singh*, who must have lived 200 years or more ago, as he was seven generations back from the one who was ruler fifty years ago.

The name of Raja Bhagwān Singh was preserved from the oblivion that has overtaken his ancestors solely by his having had the hardihood to make war on the King of Delhi of the time. It was in the direction of Kashmir—then ruled from Delhi—that occurred the collision between these two powers so disproportioned in force. Tradition says that there was some fighting, but that the Raja ultimately submitted,* and then the King of Delhi kindly bestowed two Wazīrs upon him, to advise him, to see that he committed no such errors as the last. The names of these two were Jīūn Pāl and Kahn Pāl; they were Khatrīs of Delhi. It is a curious thing that descendants of these men to this day are in Kishtwār; I made acquaintance with some of them. The position of these two Wazīrs must have been just like that of a British Resident at a Native Court in India now; but in that their office became hereditary, and that their families for generations supplied advisers to the ruler, the parallel does not hold.

After Bhagwān Singh, came in regular descent Raja *Mahā* Singh (or perhaps Mān Singh) and Raja *Jy Singh*, of whom nothing is recorded.

Then came (I am told he was son to the last named) Raja *Gīrat Singh*. This one left his old faith and became a Muhammadan, being converted by the miracles of one Syed Shāh Farīd-ud-Dīn. Gīrat Singh was called also a disciple of the Emperor Aurangzeb, who gave him the new name and title of Raja Sa'ādat Yār Khān.

This conversion seems to have been followed by that of a certain number, but by no means a majority, of the Kishtwār people. Of Muhammadanised Kishtwārīs, as distinguished from Kashmīrīs who, being Muhammadans, came in and settled, there are some both in the town and in the villages. No doubt many of the servants of the Raja turned Muhammadan with him. We must remember that at that time the faith had the prestige of

* One march on the road from Kishtwār to Kashmir is a place called Mughal Maidān, or, by the Kashmīrī, Mughal Mizār; Maidān means *plain*, Mizār means *burying-place*. People say that here some two hundred Mughal soldiers, that is, soldiers of the Delhi King, were cut up by the Kishtwār Raja's forces; it is probable that this happened on the very occasion spoken of in the text.

being the one held by the rulers of India. I have met people, Muhammadans, descended from the *farāsh*, or carpet-layers of the Raja, who were converted with him.

After this first Muhammadan Raja (whose change of religion determined the faith of all succeeding Rajas) came Raja *Amlūk Singh*, who received from the King of Delhi the style of Raja *Sa'adatmand Khān*. Then came Raja *Mihr Singh*, who received from the same source the title of Raja *Sa'īdmand Khān*. Next came Raja *Sujhān Singh*; then Raja *'Ināyat Ulla Singh*; lastly, Raja *Muhammad Teg Singh*, also called *Saif Ulla Khān*. It is curious to see how the Rajas kept to their old title of *Singh*, in spite of having received from the emperors the Muhammadan one of *Khān*.

Raja Teg Singh was the last independent Kishtwārī ruler. Down to his time the descendants of the two Wazīrs sent from Delhi were serving the family (they, by-the-bye, had not become Muhammadans); but Raja Teg Singh made his chief adviser, and gave the title of Wazīr to, one Lakpat, a Thakar, who till then had been a small landholder. This man came to have a quarrel with his master, and I have heard something about the Raja drawing on him and wounding him. At all events, Wazīr Lakpat fled from Kishtwār and came to Raja Gulāb Singh, at Jummoo, and put him up to annexing Kishtwār, showing how easily it could be done. Gulāb Singh brought a force to Doda, and there was met by the Raja, who, without fighting, gave himself up. He went to Lāhor, to Ranjīt Singh's Court. Teg Singh had two sons, Jemal Singh and Zurāwar Singh. Cunningham says that the representative of the family (whether one of these two or a further descendant I do not know) was converted to Christianity by an American missionary at Ludhiāna.

Kishtwār has ever since belonged to Jummoo Wazīr Lakpat held high office under Raja Gulāb Singh, and did him good service; he was killed at Munshī Bagh, close to Sirīnagar, in the fight between Gulāb Singh's troops and Shekh Imām-ud-din's, in the year 1846. His son was Wazīr Zurāorū, who was a confidential minister of the Maharaja's when I came to Jummoo;

he died while I was there. The family still have in some way power, and I think hold land, in Kishtwār.

It has been said above that the descendants of the two Wazīrs from Delhi for long remained in power in Kishtwār. They were, in fact, hereditary ministers. They so far left the rules of their caste—induced to do so, no doubt, by their isolated position away from all their caste-fellows—as to intermarry with the Thakars. When I was in Kishtwār an old gentleman of that family, Wazīr Khoja Bhoncha, a man then over eighty, a man who had travelled, who had seen Multān and Peshāwar, told me of some of the events written above, and of others in which he had been an on-looker, and even an actor. Some of these are connected, distantly perhaps, with the late history of our own country. He told me about Shāh Shuja'-ul-Mulk, the refugee King of Kābul, the supporting of whom afterwards brought so much trouble to the British nation; how one day, on Bysākhī, the festival held on the first of the month of Bysākh, Shāh Shuja, got free from the toils that Ranjīt Singh of Lāhor was holding him in, and made his way through the mountains, all strange to him, through, necessarily, tracts held by Hindū rulers, whose protection, as they were more or less under the influence of the Sikh power, he could not rely on, to Kishtwār, to the one Hill Raja of those parts who was of his own faith. The Raja of Kishtwār entertained him well, and supplied his wants for two years. This Wazīr Khoja Bhoncha was appointed to attend him as *mihmāndār*, or guest-keeper. The Wazīr spoke with great admiration of Shāh Shuja', as a fine man, and a man of real kingly disposition and presence. After staying quietly in Kishtwār for two years, the dethroned king became impatient, and he formed the wild scheme of attacking Kashmir. The traveller Vigne says that, Azim Khān being then the Afghān Governor of Kashmir, Shāh Shuja' entered it by the Mīrbal Pass with three or four thousand men. He was defeated, and was obliged to return to Kishtwār. Ranjīt Singh, who himself was making attempts on Kashmir, was not going to let Shāh Shuja' carry on such projects, and he would not have him remain in Kishtwār.

He sent word to the Raja to forward the refugee to him as a prisoner. This the host declined to do, but it became necessary for Shāh Shuja' to leave his protector for fear he should bring about his ruin. The advance on Kashmir probably was in 1815; the retirement from Kishtwār in 1816. Crossing the snowy range to Zānskār, and marching along at the back of it, Shāh Shuja' came over into Kulū, and made his way down to Ludhiāna, the British frontier post. From the time he reached that place till his death his strange fortunes make part of British history.

KISHTWĀR TO PĀDAR.

We will now trace the Chīnāb still farther up, into the district which bears the name of Pādar. In doing this we shall get among mountains of a different character from those hitherto described, too lofty to be classed as "Middle Mountains;" but it will be more convenient to follow the river into this higher part of its valley now than to break off on account of its not strictly coming under the heading of this chapter.

It has been said that this Chīnāb river flows in a deep hollow many hundred feet below the Kishtwār plateau. A road from Kishtwār to Kashmir crosses the river just above the junction of the Wardwan stream, which flows in from the north. The level of the junction I made to be about 3600 feet. Above the junction, for some hundred yards, the Chīnāb comes through a narrow channel in the rock, only 60 feet wide, flowing smoothly and slowly, with doubtless a great depth of water. The rise and fall between winter and summer is about 30 feet. It is here bridged in a way that is often adopted among these high mountains for the larger rivers. There is a suspension bridge of simple construction. First of all, a dozen or more ropes, more than long enough to span the river, are made of twisted twigs, commonly of the birch, but other trees or shrubs are used as well; each of these ropes, rough, with the cut ends of the twigs projecting, is about of that thickness that it can just be spanned with the finger and thumb. These are collected into three groups, each group of four or more ropes loosely twisted together; one of these cables is

hung across for one's footing; the other two, a yard above it, one on each side, are for one to steady one's self by. The passage of these rope bridges (which go by the name of *Jhūla*, that is to say, a swing) is usually not difficult; still, for some people, the seeing a torrent roaring beneath the feet, with only a few twigs for support, is nervous work; when, with a bridge of large span, there is a high wind that sways it to and fro it is really difficult to those unused, and even to those used to the work if they have to carry a load. Traffic is sometimes stopped for some hours by reason of the wind. The greatest span of a bridge of this sort that I have known is about 300 feet. The one at Rondū I measured, and found to be 370 feet in the curve.

It will be understood that four-footed beasts cannot cross by these bridges: in this case by Kishtwār, ponies are swum across, aided by a rope held by a man who leads it across the bridge. This is a dangerous business for the animals, and it often leads to losses, for one mistake or a little hesitation will cause them to be drowned. I have met with one exception to the rule of four-footed animals not crossing these bridges. I knew a dog who commonly followed his master over them; it was a spaniel of English extraction that belonged to the Thānadār of Zānskār: he would deliberately, slowly, walk along the rough twig-ropes, steadying himself at every step; even when the bridge was swaying in the wind he never lost his nerve.

Such a bridge as this is renewed every three years, if before that it is not carried away by any unusual flood.*

Following the river up towards Pādar, we get at once among high rocky mountains.

The road takes a shorter way than the river, rising over the last spur. It is four days' march from Kishtwār to Atholī, in

* About Muzafarābād the ropes composing the Jhūlas are made of buffalo-hide. In some parts of the Chīnāb Valley another sort of bridge is in use; it is called *Chikā*, which may be translated "haul-bridge;" a smooth rope of several strands is hung across, and on this traverses a wooden ring, from which hangs a loop in which one seats one's self; by another rope the ring and all are pulled across; down the curve the passage is quick, but the pulling up is a slow process, sometimes interrupted by the breaking of the hauling rope, when the passenger is left swinging in the middle.

Pādar, the distance being 48 miles. In the first day's march we pass through a thick forest of oak varied with firs. The path contoured through it for some miles; there were signs of deserted terrace-fields, which must have been thrown out of cultivation long ago, for oaks of 6 feet girth were growing on them. Anon the road passed along a rocky face of hill somewhat difficult to cross; again we came to a wooded slope, where there was a mixed forest of deodar, *Pinus excelsa*, oak, and chestnut, with underwood of hazel; and so, with many ups and downs and much curving in and out of the ravines, mostly among woods, Bagnī, the first stage, was reached.

For the next two marches and more the way leads over somewhat similar ground, but with greater heights to climb. The river is edged by cliffs, and to avoid them the path rises to great heights. In one march we had to ascend as much as 2500 feet. The road was in many parts difficult; sometimes we had to ascend many hundred feet across smooth slopes of rock; where not rocky, the ground was often in forest; there was little cultivation, but there were signs of there having been more in some former time.

Our height above the river gave such an advantage for seeing the mountains on the opposite side of it that the views from many points along the march were some of the grandest I had seen in the Himalayas. We looked across the valley, sometimes with a clear open view, sometimes getting peeps through the dense forest, on to great broken cliffs or rocky slopes that rose direct from the river for 6000 or 7000 feet; these were the ends of mighty spurs from the lofty ridge beyond, which we sighted, as we passed along, looking up the valleys that in succession opened between the spurs.

From one of the highest points reached by the road, a place called Sirī, 8700 feet high, which was formerly a summer grazing place, and is the halting place at the end of the third march, we saw as great a vertical height within a few miles as one can often see even in the Himalayas. The summit was 12 miles distant, and in that space a height of 16,000 feet was visible. There rose a magnificent set of peaks, called the Brama peaks—five points in

a sharp rocky ridge—20,000 and 21,000 feet high; some are so steep as to bear little or no snow; some are thickly clothed with it. A glacier occupied a hollow, and extended towards us for some miles, but ended off still high up. The rocky ridges and precipitous spurs that lead down from the peaks are on a very great scale; a thousand-foot cliff would count for little among them. At the lower part of the slopes, wherever a little ledge has enabled the seed to lodge, deodar-trees crown the rocks. The river washed the foot of the spurs at a level of five or six thousand feet.

Passing on round mountain spurs on our own side, we suddenly come into view of the inhabited part of Pādar, which is altogether on the south side of the valley. There are a number of villages occupying ground sloping to the river, backed by lofty wooded and snow-capped hills. The road brought us down to the level of these villages, and then led us along the river-side for a few miles to Atholī, which is the head-quarters of the district.

Besides the road by which we had come from Kishtwār, which is the summer road and does not open till May, there is another that may be traversed in the winter when the water is low, for then some of the obstacles—the steep cliffs—can be turned by taking to the river-bed. There are, however, some parts of this which make it a very difficult path; it is impossible to take ponies along it; the upper road indeed is hardly fit for them, but the few that go in and out of Pādar go by that way, only at some risk.

PĀDAR.

The space included under the name Pādar consists of the valley of the Chīnāb from a little below Sirī, our last stage, up to the boundary of Pāngī, which belongs to Chamba, a length of 30 miles, with, in addition, the valley called Bhutnā up to its source, and the subsidiary ravines of both the Chīnāb and the Bhutnā River.*

* Pādar is, I believe, the proper native name. Sometimes by the Dogrās, and more often by the Zānskār people, it is called *Pāldar*, or *Paldar*. Cunningham (see his 'Ladak,' pp. 342–344) confounds it with Padam, the chief place in Zānskār; this mistake curiously confuses a portion of his otherwise admirable account of the conquest of Ladākh by the Dogrās.

Pādar is surrounded, we might almost say enclosed, by mountains bearing perpetual snow; these give rise to glaciers, which end off at too high a level for them to project into the main valley. Most of the mountains in sight from below are either the rocky or the forest-covered lower slopes. The cultivated part is very small in extent; there is the collection of villages in the four miles below Atholī, where is the widest opening in the whole tract; and there are some small villages at intervals farther up the two valleys. All these together have 400 houses.

Atholī, which may be counted the chief place in Pādar, is on an alluvial plateau, 6360 feet above the sea and 200 feet above the river; on the opposite bank is a wider plain, some 60 feet lower in level. At the very point of the meeting of the Bhutnā River with the Chīnāb, only 40 or 50 feet above the water, is the present fort, a little toy-looking affair; it is a square work with round corner towers, built, in the manner of the country, of alternate courses of stone and timber, and plastered over; it is garrisoned by ten or twelve men. Behind the fort are remains of the former town of Chatargarh; these are linear heaps of stones, arranged, on the whole, in a square form. On the same plateau are groups of trees, sheltering some wooden temples and shrines.

The Chīnāb, which flows between the two plateaus, comes from the direction of Pāngī through a rock-bounded gorge, in a narrow deep stream; then widening out it sweeps along below Atholī. At the beginning of June, when the sun was fast melting the snows, and the glacier-water was bringing down in suspension a fine light drab mud that coloured the whole river, the rate of the current at this spot was 6½ miles an hour. It is here spanned by a rope bridge; a wooden bridge that for some years had existed, was carried away by a flood about 1865; this probably was the flood which I heard of as having been brought about by a natural damming of the river in Lāhol far away up; the breaking of the dam made the waters rise at Atholī to something like 100 feet above their winter level.

The climate of Pādar is severe. From its elevation, and the considerable moisture of its air, there is a great fall of snow in

winter. I hear that snow gets to be 3 feet deep and stays 4 or 5 months, and that there is a good chance of it falling at unseasonable times besides. This and a want of sun make it difficult for the crops to ripen. The sunshine is intercepted, not only by the clouds that the mountains attract, but also by the mountains themselves, which shut in the valley so closely. At Atholī I found that the average angular elevation of the visible horizon—that is, of the mountain-summits all round—was 18°. This want of sunshine affects the fruits, which do not well ripen, though some fruit-trees, especially walnut trees, are common.

Pādar is one of the few places where I have met with the edible pine, *Pinus Gerardiana;* it is a large spreading tree with smooth bark; scattered individuals of it are found in the forest.* Wild carraway grows here, and is gathered in quantities to be carried to Jummoo for sale; the price in Pādar is about eightpence a pound.

The district we are now in is one of those where deodar forests occur in such positions as make it practicable to fell the trees for timber for use in the Panjāb. The necessary condition is that the slope on which the trees grow should be so near a large stream that without an extreme amount of labour the logs can be moved or slid, without fear of splitting, into the water, where they will float away down the stream.

Since the beginning of British rule in the Panjāb the demand for deodar timber has been great. No tree grows in any quantity in the Panjāb which will produce beams fit for a large building. Hence in former times to some extent, but still more since the British came there, the Panjāb has called on the Himalayas to supply it with timber; of all the Himalayan trees the deodar has been proved to be the best to resist the destructive insects, especially the white ants, which abound in the plains.

In the course of years the most favourably situated deodar forests in the Chīnāb Valley have been felled, and there now remain chiefly trees which either are of a less girth than can be

* The only other part where I have found this tree is near Dūīyān, in the Astor country, as mentioned in Chapter XVII.

used to the best advantage, or are at such a distance from the stream-bank that the transport of the logs to the water is difficult, or, may be, would involve a prohibitory expense.

What was considered a good tree was one whose girth a few feet above the ground would be not under 9 feet, and whose height, for useful timber, was 60 or 70 feet; now in the forests we passed through from Kishtwār hither, the common girth was 5 or 6 feet only.

The plan is to fell the tree with axes, and cut it into logs of length varying, according to the use the timber is to be put to, from 10 feet to 20 or more, and to mark them in some distinctive way. The logs are then rolled or slid down the hill-side, or down some small ravine of regular slope, to the river.

This work is done in the spring and early summer—or if deferred till the autumn, it would be but in preparation for the next year—so that, on the rising of the river from the snow-melting, in May, June, July, and August, the logs may float away. In spite of some of them becoming stuck on the rocks or stranded on the shore, a good many will find their way through the mountain country to where the river debouches into the plains. What is done with them there we shall see when we come again to Akhnūr, on our march to Kashmir.

Although nearly all the easily-reached deodar-trees of large size have been cut down, there still remain, in the valleys of the Chīnāb and its tributaries, forests that may be made available by longer slides; and there are besides, in places very accessible, numbers of trees which, though not of full size, will yet produce much useful timber.

While in Pādar I heard accounts, and carefully verified them, of avalanches that have at various times occurred there. They come from the range on the south. The summits of this are at a level of 15,000 and 16,000 feet; from that height down to the Pādar Valley is a fall of 9000 or 10,000 feet in six miles. The valleys that drain great spaces of these snow-covered mountains narrow at last to a gorge, just before debouching into the main valley of Pādar. It is in years when unusually much snow has

fallen on the mountains that avalanches come; the snow rushes out of the gorge that makes the mouth of the side ravine in a continuous flow that lasts for half an hour or nearly an hour, carrying down stones and trees, carrying them down the sloping ground of the alluvial fan at the embouchure of the ravine. On one of these fans were stones 6 feet across, which had been, in the cognizance of my informants, brought over it by such an avalanche, and I believe that much larger masses have been thus moved.

The time when this phenomenon may occur is in the months of Poh and Māngh, that is, between the middle of December and the middle of February. The snow was described to me as being like flour.* The flow of it seems a real drainage of snow from a great area of the surface into the one line of the gorge.

There are stone-phenomena at Pādar and some other places, the accounting for which will be helped on by a knowledge of the occurrence of these avalanches. There are lines of heaped stones parallel with the side streams and leading up to the gorge from which may have come the avalanche; they are not like an alluvial fan deposit, though they are sometimes mixed up with that, and they are often too regular to be like the moraine of an old glacier; the material of such long stone-heaps was, I think, brought down with the rush of snow and deposited just at the side of the stream of it. It is, however, often difficult to decide whether a particular deposit should be referred to this agency or should be classed as an old moraine.

Pādar History.

Let us now turn from these physical details to learn a little of the history of the men who inhabit the district.

The people of Pādar are in great part Thakars. There are also some low-caste people, chiefly of the Megh caste; there is

* In Tyndall's 'Glaciers of the Alps,' pp. 164–5, there is an account of an avalanche at Saas, where also the snow is likened to flour; the fineness of it must be due to its forming at high altitudes, at a very low temperature, and perhaps to there being at the time of its formation but a small positive amount of moisture in the air.

an entire village of these near the fort. There are a few Muhammadans who probably are converted Thakars. The Thakars have just those characteristics by which we described the Pahāris generally.

Besides the Hindūs and Muhammadans, there are two or three hamlets towards the head of Bhutnā, eleven houses in all, inhabited by Bhots or Buddhists from Zānskār, on the farther side of the great range. I here only mention their occurrence; the characters of that Tibetan race they belong to will be given farther on, under the heading of Ladākh.

The people of Pādar seem a good deal given to serpent worship; they do not, however, separate it from their observance of the rites of the Hindū religion; the serpent is reckoned among the many devtas or gods recognised by that faith; one sees temples raised to different *nāg-devtas*, or serpent-gods, which are adorned with wood-carvings of snakes in many forms.*

The earliest state of Pādar that I can hear of is in a period that ended more than two hundred years ago; then the chief men, or the rulers, or the ruling caste, were Rānās. Rānā is an old Hindū word for a ruler who (in these parts, at all events) is less in power than a Raja. The Rānās of Pādar were Rājpūts; every village or every two or three villages had its Rānā, an independent ruler, who used to make war against his neighbour the next-door Rānā. The district of Pāngī was, I believe, in the same state. There are descendants of these Rānās in Pādar to this day; they have taken to cultivation and till the bit of land that has been preserved to them; but they still keep their caste distinct; they will marry the daughters of Thakars, but will not give theirs to them in marriage.†

That state of things, so pleasant for the Rānās, was broken in upon by Raja Chatar Singh, of Chamba, who was eight generations back from Raja Srī Singh, who was ruler in 1869; the time

* One of these temples is where there comes out a hot spring of considerable volume which has a temperature of 131°; bubbles of sulphuretted hydrogen escape from it. Here a bathing-place has been built, and a dharmsāla or resting-place for faqīrs.

† Rānās are met with also in Bhadarwāh.

of the change may therefore have been about 1650 A.D. Chatar Singh first conquered Pāngī; from there he advanced with some 200 men to Pādar, and, annexing it, founded the fort and town named after him Chatargarh, whose ruins or traces are still to be seen opposite to Atholī.

The place flourished well; forty years ago it had 140 houses —a large collection for this thinly-peopled country—nearly all enclosed within the four walls of the square fort. Water was brought to it from a ravine at some distance, being led across the plain in a wooden trough raised on a stone bank. I am told that on the founding of this town most of the followers of Chatar Singh settled there and formed the mass of the male population. Those who settled, whatever their caste—Brahman, Rājpūt, or what—intermarried with the inhabitants and became practically Thakars. One of my informants told me that he himself was descended from a Brahman who was of that immigration, but now he could call himself nothing but a Thakar.

From Chatar Singh's time onwards Pādar remained comfortably under the Rajas of Chamba for five or six generations.

A late episode of that time I was told of by the Pādar people, and incline in the main to believe, though I have not verified the story. They say that about the year 1820 or 1825 A.D., they made up an expedition against Zānskār, and brought that country (which was held by a Bhot Raja, under Ladākh) to be so far tributary that every year 1000 rupees, besides musk-bags and other things, were sent by the ruler of Zānskār as nazar to the Chamba Raja. A strange feature of this business was that it was carried through by one Ratanū, a Thakar, a small landowner of Pādar, and not by orders from Chamba.

The event that led to the next change in Pādar was the invasion of Ladākh by the Jummoo troops under Zurāwar Singh Kalūriā,* a leader in the service of Maharaja Gulāb Singh, in 1834. Of this invasion an interesting account is given by Cunningham from an actor in it. At the end of the first year of the war in

* Kalūriā is the name of the tribe of Rājpūts (located near Simla), to which this bold leader belonged.

Ladākh, Zurāwar Singh sent Wazīr Lakpat (whose early career we have traced from Kishtwār) from Zānskār to Pādar, in order to open a new road from Jummoo to Ladākh.

Cunningham's account says there was some little fighting. Lakpat passed on, leaving only a thānadār and a few men in Pādar, having done no harm to the place. After Lakpat had left, the enterprising Ratanū above mentioned stirred up the people, who seized the Dogrās and sent them prisoners to Chamba.

The Raja of Chamba disavowed the act to Gulāb Singh, and, releasing the prisoners, sent them to Jummoo. But this did not avert the consequences. On the opening of the season Zurāwar Singh himself came with a force (Cunningham's informant says 3000 men), but he was unable to get at Chatargarh, for the bridges across the Chīnāb had been destroyed. He was thus kept at bay for two months; during this time he had established a battery on the edge of the plateau, on the left bank, where it overlooks Chatargarh.

At last, with the help of some peasants, the Dogrās got a rope across a few miles lower down, and crossing over by means of this, they came up the right bank of the Chīnāb; then, getting across the Bhutnā River by a bridge that had not been destroyed, they advanced on Chatargarh, took it by storm, and set fire to and completely destroyed the town, so that nothing but heaps of stones were left. Zurāwar Singh hanged several people, and mutilated several. By these measures and by the building of the present fort, the Jummoo rule became firmly established in Pādar, which has remained quiet ever since; it is now under the Tahsīldār of Bhadarwāh.

I must not omit to tell of the end of Ratanū, the patriot. He was sent prisoner to Jummoo, and there kept in confinement for three or four years; then he was released, and received for his maintenance a small jāgīr, or land-grant, in the Kishtwār country, which his sons still hold. Once after this he offended Gulāb Singh. On the death of the Raja of Chamba of that time he shaved his beard; it is the custom, as we have seen at Jummoo, for Hindūs to do this on the loss of their sovereign, and,

so far as it went, it was a sign of disobedience against, a disavowal of, the authority of Maharaja Gulāb Singh. That ruler had Ratanū brought to him at Jummoo, but then forgave him.

BHUTNĀ.

We have seen that Pādar includes the valley called Bhutnā, which leads down from the great snowy range till it joins the Chīnāb Valley. From Pādar a road goes up Bhutnā and crosses to Zānskār by the high, snowy, and difficult Pass named Umāsī Lā by the Zānskār people, and Bardhār by the Pādar people and the Dogrās. I passed from Pādar over this Pass to Ladākh, but I do not propose to tell of the journey, only to take the reader up the Bhutnā Valley to see what there is of interest on this side of the snowy range.

Crossing both the Chināb and its tributary, we went along the right bank of the latter by a fair path, sometimes 200 or 300 feet above the stream, and sometimes at the level of it. We passed patches of cultivation on both sides, and several hamlets of a few houses each; some of the villages had walnut-trees flourishing, but their fruit does not here ripen well. At one part we went through an oak wood, which grew on both hill-sides. Deodar had been growing, chiefly on the left bank above the oak, and farther up the valley it had reached down to the river, but it had all been felled for timber.

These hill-sides which we passed along, as is commonly the case in the narrow Himalayan valleys, were the extremities of spurs from greater ridges; they themselves showed us a face of some thousand feet, but they were connected with much more lofty mountains, mountains of perpetual snow, 18,000 to 20,000 feet high, which are only sometimes caught sight of through the dividing side-ravines.

Above Kundhel we see instances of a fall of rock having dammed the river. Going upwards, we first find the water coming over the talus or fan-material (the cause of the damming) in a cataract, while immediately above the valley opens, and the waters spread out almost wide enough for them to be called a lake.

Farther up is another such closing of the river from the side and widening above.

These semi-lakes had apparently been quite lately formed, as there were trees upright some feet in the water, which therefore had been brought to its present high level by damming since the growth of the trees. But, again, there was something to show that the water had been yet higher before now—sandy alluvial beds some 15 feet above the present surface. These things prove that at different times the same event occurred; that the lake and accompanying lake-deposits had been formed, that the water had drained away to a lower level by a channel being cut through the dam, and that a later increase of the dam had caused the action to be repeated, though not quite to the same degree as before.

As we approach Hamūrī the valley has a more stony look; the masses of rock that have fallen from the cliffs above, or have been carried down in snow-falls, are very conspicuous. Hamūrī itself, a little village in the valley, 8800 feet above the sea, interested me on account of the evidence it gave of certain recent physical events. Some twelve years before, about 1857, a rush of snow down the two ravines a little below the village, one on each side of the main valley, advanced the taluses so much that these completely dammed up the river; the waters of it rose to the level of the village as it was then situated, and came over some of the fields; the people left their houses for fear of inundation, but soon the waters cut for themselves a small channel, and the level of them was lowered some 30 feet, but still remained 60 feet higher than at first. From the dam downwards was formed a great and violent cascade; but above, at the time I am speaking of, there was formed as it were a lake, where the water was quite calm, and, from its depth, flowe very slowly. In the space of three years the greater part of this depth (which must have been 60 or 70 feet, plus the original depth of the stream) was filled up with sediment of sand and pebbles. The point of interest here is the great rapidity of formation of this lacustrine or semi-lacustrine deposit.

For a year or two the village remained undisturbed; then

misfortune came in another form. It was a very snowy year. From the side of the valley opposite to that on which the village stood, from the left bank, came down an avalanche, and this was able, from the bottom of the valley of the river being so filled up, to reach across to the village. The village would have been safe had the original form of the valley been retained, but with the hollow bridged, as it were, with the gravel deposit, the avalanche spread over and made a great plain of thick snow (beneath which the river found its way), and completely buried the houses. It was night time, and all the people were at rest; the headman managed to dig his way out and call aid from other villages. In about twenty hours all the inhabitants of Hamūrī were excavated alive, though some were insensible from the confinement of the air. The people love to relate how that more came out than had been buried, for during the night a child had been born beneath the snow.

Hamūrī was fated to undergo further alarms. Not long after the last event an earthquake brought down a great mass of rock from the cliff that overlooks the place. This landslip destroyed some of the fields and knocked in one or two of the houses, which, however, were empty at the time; so here, too, the Hamūrī people had less ill-fortune than was threatened. But now they concluded that it was time to leave a spot of such danger, and they begged the authorities to give them land elsewhere; but since the keeping up of settlements in these high parts is almost necessary for the aid of travellers between Pādar and Zānskār, they were persuaded to stay with the relief of some reduction of their land-tax; so they built a new village higher up, but they could find no site that is quite free from the danger of avalanches.

A little before coming to Hamūrī we had passed two cascades, on the left bank, made by two streams, near together, tumbling over successive ridges of rock; the whole fall of each was some 1500 feet. In a ravine neare, Hamūrī, where the foot of a glacier that is embosomed high in the mountain comes to the edge of a steep cliff, the water from it comes over in a fall of several hundred feet.

I must not leave unnoticed the *roches moutonnées*, produced by old glaciers, in the main valley a little higher up than Hamūrī, with grooves on the gneiss rock running in the direction of the valley; this is about 300 feet above the river and 9200 feet above the sea.

The highest village of any size in the Bhutnā valley is Machel, two marches, or 22 miles, from Atholī. At Machel Bhots predominate, though there are a few families of Hindūs. The Bhots seem to have been for long settled in this upper end of the valley. Machel is 9700 feet above the sea; the highest inhabited place of all is Sunjām, half a march beyond Machel; here is but one household of Bhots, a hardy family; they are confined within doors by the snow for seven months in the year. We were there on the 7th June and the snow had melted from the fields about a month before.

We had noticed, as we ascended the valley, that the vegetation gradually diminished; at Machel the mountain side had become much barer; there were some stunted deodars, but at a height of 9800 feet the growth of that tree altogether ended; spruce and silver fir continued farther; birch, which had at first appeared at 8000 feet, grew higher than all the others. The last limits of forest trees that I observed, still along the valley, were 12,000 feet for silver fir and 12,500 feet for birch; but this was counting the last straggling trees.

At Sunjām, 11,000 feet, they sow wheat, peas, buckwheat, and the kind of barley called *grim*, the grain of which becomes loosened from its husk like the grain of wheat, which I shall hereafter call "naked barley." Often the wheat does not ripen, but they sow some every year for the chance. Sometimes the whole harvest fails, and then they have to go to the Kishtwār country for grain, taking down sheep to exchange.

Beyond Sunjām is nothing but a waste of streams and bare mountains, of glaciers and of snow.

MIDDLE MOUNTAINS OF THE WEST.

West of the meridian of Jummoo, as has indeed been more than once said, these mountains have not such a wide area, nor

one whose boundary with the Outer Hills is so well defined as is the case on the east.

As so much time has been spent over the eastern tract, I will now do little more than point out where on the west similar spaces occur.

Just west of the Chīnāb, behind Paunī, a ridge, which corresponds to the one we traced as far as that river from the east, rises suddenly and towers above the Outer Hills which lie to the south of it. This is called Dragarī Thār, being sacred to a devta whose name is Dragar. The south face of it is a great escarpment; it has a line of precipitous limestone cliffs, of which the part vertical is about 1000 feet, and far down beneath that a talus-slope continues; the ridge is narrow and the ground inclines quickly, but not precipitously, down to the north.

Looking in that direction from the summit, we get a general view of this mountain-tract which shows it to have the same characters as that around Rāmban and Bhadarwāh. We see a number of ridges, some parallel for a short distance, some branching, spreading out in innumerable spurs in every direction. The lower parts are dotted with chīl-trees and with patches, or, as they appear in the distance, specks of cultivated ground. The higher ridges bear thick forest of the other pine. These mountains are in the tract called Budil, which is drained by the Ans River. I have never been over it, but, from accounts, believe it to be very similar to what was described behind Rāmban, and to have for inhabitants the same Pahārī race. Beyond appears the snowy Panjāl, the southern boundary of Kashmir, which at this part is a complete ridge, nowhere broken by a gap, only jagged by rocky peaks standing up out of the snowy mass. In the beginning of May, when I saw the range from this spot, snow was covering a great vertical height of the mountains, but by August or September all melts away, except a few beds that have collected to a thickness by snow-slips.

The neighbourhood around Dragarī Thār produces iron, which is smelted by the caste called *Dhiyār*. These men, at the starting of a new furnace or the beginning of any other important business, go to a spot on the ridge where there is an altar raised

to the devta Dragar, and there sacrifice. They kill a goat and burn some *ghī* before the altar. The ghī burnt, they eat the goat themselves, not, I think, sparing even the head to the flames. The iron spoon the ghī was burnt in is left. There were something like a hundred iron spoons accumulated, and around some iron tridents were placed, and a collection of strangely-shaped stones.

The next part that I know of these mountains is the country between Rājāorī and the Pīr Panjāl Pass. If we leave the main road to Kashmir and go up the Darhāl valley, we find ourselves at first between hills of the character of those which we have classed as "Outer Hills," but in about six miles they take the character of those of the "Pahār;" this is partly due to change of geological formation—for we have here come upon older rocks—and partly to increased height. The slopes are more continuous; they are unbroken by parallel jutting beds; their surface is better suited for the growth of forest trees. At the village called Barī Darhāl, a few miles farther up, we are quite among mountains of this kind; they are all clothed with thick wood, in the lower part of deciduous trees, while, above, the forest suddenly changes to fir, which extends far up the slope till replaced at the last by birch. These mountains belong to the Ratan Ridge, which not far from here branches from the Panjāl Range; the ridge itself, with its spurs and the space included between it and the high range, extending towards Pūnch, make another wide tract of "Middle Mountains." We shall come again to the Ratan Ridge on our march to Kashmir.

There is another long ridge, similar in many respects to the Ratan Ridge. It branches off from the Panjāl Range farther to the north-west, and runs in a general way from east to west, for 50 miles straight, or nearly 70 measured along its course. This, with its branches and spurs, occupies an area between the latitude-parallel of Pūnch and the Jhelam river, which area also we must count to belong to the tract.

CHAPTER VII.

MARCH FROM JUMMOO TO KASHMIR.

ROUTES FROM THE PLAINS TO SIRĪNAGAR, IN KASHMIR—PREPARATIONS FOR THE JOURNEY—JUMMOO TO AKHNŪR; ONE MARCH—TIMBER CATCHING AT AKHNŪR—AKHNŪR TO RĀJĀORĪ; FIVE MARCHES—RĀJĀORĪ TO SIRĪNAGAR; EIGHT MARCHES.

AFTER the Middle Mountains, the next tract that will have our attention is Kashmir. Before, however, beginning on that country, I propose to give, in this separate chapter, some account of the roads, but especially of one of them, between the Panjāb and Kashmir, both for an example of the kind of travelling one experiences in such countries as these, and for the sake of connecting in the reader's mind those parts which up till now we have dwelt on with the countries beyond.

ROUTES FROM THE PLAINS TO SIRINAGAR, IN KASHMIR.

The statement of the number of routes between the plains and Kashmir may be varied, the number may be made greater or less, according as one takes in or leaves out the less frequented, difficult, roads, and according to whether one counts the combinations that may be made by following first one route, then by a cross-road joining another. In the Political Map are shown six or seven routes that start from various parts of the plains and unite at Sirīnagar the capital of Kashmir, and in Appendix IV. the marches in each route are given in detail.

The various roads are used in different degrees and for different purposes.

The road from Jummoo by Banihāl is the chief commercial route. It has become so for the reason that its starting-point in the hills is not very far from Amritsar, the emporium of the Panjāb, between which place and Jummoo there has long been a close commercial connection, while the road is open for more

months of the year than some of the others. But the path itself is not good, nor is the country it goes over favourable to communications; there are five distinct ridges of hill to be crossed, besides many ups and downs over spurs that cause almost as much labour as do the passes. Horses can pass along it, though with some difficulty; the greater part of the carriage is done by men, or, in the case of grain, by pack-bullocks.

The second road, by Budil, is so far worse than the last that it is impassable for horses; it is only traversed by men, chiefly by those engaged in carrying up loads of salt and bringing down ghī.

No. 3 is a cross-road from Jummoo to join the next.

The road numbered 4, from Bhimbar over the Pīr Panjāl Pass, is the one, as told in Chapter v., that the Delhi Emperors used to go by, and that at this day English travellers much frequent. It is a road that one can ride over on a hill pony.

The next, from Bhimbar, by Rājāorī and Pūnch, to Sirīnagar, is a combination of numbers 4, 5, and 6. It avoids the high Pīr Panjāl Pass, and for that reason it is freer from snow, and open for traffic earlier in the season, than the preceding one.

The route marked No. 6, from Jhelam, is not much used, since it traverses rough ground. In some respects, however, it has advantages over the others. It seems to me likely that when the railway from Lāhor is completed as far as Jhelam, that place will become a good starting-point for Kashmir, and this road may get more into favour, and merit a better construction and maintenance.

Route No. 7, from the British Hill-station of Marī, or Murree, is not much used for commercial purposes, but is a great deal frequented by English travellers. One can now go right up into the hills, to Marī itself, by post-carriage, and there, already in cool breezes, can at leisure prepare for the march to Kashmir. The road, too, is about the best of all; horses can go along it without danger.

Route No. 8, from Abbotābād by Muzafarābād, is the only one that is free, or nearly free, from snow in the winter; besides this

it has the advantage of not going over high ground, the ups and downs in it are trifling; hence it is a convenient road for those whose way, from Kashmir, say, lies in the direction at Atak and Peshāwar.

Not all of these roads are open to the English traveller (whose journeyings involve special arrangements); the first three are closed to him. The others have been open to Englishmen for six months of the year. Quite lately new arrangements have been made; I am not sure whether or no this restriction about time has been taken off. There is now, I believe, a limitation of the number of officers of the army who may go to Kashmir for their leave; 200 at one time are allowed. The justification for this is the great requisition for carriage that, as will be seen below, each British traveller is sure to make.*

The road I have chosen, for ourselves to look into the particulars of it, is a combination of Nos. 3 and 4. We shall go from Jummoo in a north-westerly direction, so as to cut into the road from Bhimbar at Rājāorī, and from there onwards to Sirīnagar.

PREPARATIONS FOR THE JOURNEY.

A few words before starting, as to certain specialities of travelling in the Himalayas.

The natives of India are good travellers. The poor man, one who gets his living by the use of his muscles, will make a bundle of his extra clothes (if he has any), of his bedding and his cooking-pots, and with that balanced on his head or slung over his shoulder, will make a long march without asking anything of anyone, except of the shopkeeper from whom he will buy his daily allowance of flour or rice. The class above him, those who get, say, their living by their pen, or by buying and selling, will surely have a pony for the march, probably a quiet, useful animal, one that ambles along at an easy pace; the bedding will be laid in folds on the saddle, and the rest of the baggage carried on the pummel or else made

* Some useful information about those routes which are open to European travellers will be found in Dr. Ince's 'Kashmir Handbook' (published by Wyman Brothers, Calcutta); and in Kashmir itself that book will be found very useful.

fast behind. Such a traveller, with his one servant running along at a jog-trot by his side, will be independent of porters or baggage-animals; he will do his march in his own time, and be satisfied at the end of it with any accommodation he can get—that of the mosque if he be a Muhammadan, of the Dharmsāla if he be a Hindū, or, in some cases, of the more general rest-house; or, in default of all of these, he will get the shelter of some cottage—freely given to a civil application—and there make himself at home.

It is different with the Englishman in India. His wants are not few, nor his demands either. Accustomed to numerous attendants, and to a complication of domestic appliances, he goes on the principle, when travelling, of taking with him such a large proportion of these as will give almost every comfort, except what the variations of cold and heat make unattainable, even in the wildest and most out-of-the-way parts.

I do not blame him for this: he may be right to keep all the comforts or luxuries he can. But there is no doubt that to do this increases the difficulty and the trouble of marching; every diminution of impedimenta will make it so much the easier to get along. A traveller in the hills who requires but a few porters for his baggage will be so much more independent of set routes and of the local authorities as to have an absence of trouble that will counterbalance the loss of a good many material comforts.

The usual fit-out that we Englishmen carry with us in these hills consists of a tent, carpet, bedstead, table, chairs, bedding, clothes, and other paraphernalia; this for one's own tent. In the servants' departments there will be at least another tent (probably two others), cooking things, plates, washing and ironing things, eatables, and beverages to any extent that one may choose to provide them, stable-gear, and various other things that each servant is sure to see himself provided with for his own particular work. These, with the addition of the bedding and clothes of half a dozen or more servants, make up a good amount of luggage to be carried, as it mostly has to be, on coolis' backs.

The tents to be taken in these hills are much lighter than

those square double-roofed tents used in India; even the smaller variety of that sort called "hill-tent" is somewhat too cumbersome. A simple tent, 9 feet square and 7 feet high, with the sloped roof ending in a wall of 3 feet, suits us best. For natives, a tent with the roof slope continued to the ground is good, since, for the same height, it gives more floor-space. A small shāmiāna, or square awning on four poles, with or without side curtains, is one of those things that will add to one's comfort; it affords shade without the confinement of air; for indeed the inside of such tents as we have spoken of is almost unbearable from heat when under a bright sun; only one reckons on being able to pitch under the shelter of a tree; in default, a shāmiāna will be most useful. At one time I arranged a tent, of somewhat different shape, in such a way that one side would lift up, and, being supported on a couple of sticks, do duty for a shāmiāna by day, while at night the join was laced up and the tent made taut again.

Very moderately provided after this plan one will require some twenty coolis for porters. If one lays in stores for a march of some months, it will want great care and a stern though discriminating rejection of the unnecessary, to keep the number from running up to fifty or more.

One seldom or never has baggage animals of one's own enough for the carriage of the camp; it may be useful in some cases to keep two or three mules or baggage-ponies; but it would not be wise to depend on them, for on these rough roads they are so apt to break down—to get a sore back or to fall lame; and sometimes one wants to go where neither mule nor pony can follow. The universal practice is for an Englishman, or for any native of rank who may get a special order from the Maharaja, to take his carriage, whether it be ponies or coolis, from stage to stage, changing it, getting fresh men or animals from the villages round, for each day's march.

Along the frequented roads there are special officers (called Kotwāl) for managing this business; where these are not, it becomes the duty of the lambardār, or headman of the village

(called muqaddam in Kashmir) to undertake the service. In general there are few four-footed beasts to be had. Coolis are the chief carriers; for these 50 lbs. to 60 lbs. is a fair load; the animals would carry from 160 lbs. to 200 lbs. The daily pay for a cooli is four annas, that is sixpence; for a pony or mule twice as much. The coolis carry their loads in various ways. In the Outer Hills they carry them on their heads, first making a soft bed with their turbans; this certainly is not the best way for difficult ground; farther up, in the Middle Mountains, the people often carry the weight on their shoulders, bending their head forward and fixing the load on the shoulder and back of the neck. But the most business-like way of all is that followed by the Kashmīrīs, some of the Pahārīs, the Ladākhīs, and the Baltīs, of loading the back by means of a light framework of sticks and rope, which is suspended from the shoulders.

The amount that the Kashmīrīs, especially, carry in this fashion is surprising; not that they will do much more than the weakest cooli when the labour is forced, and there is only a fixed daily pittance for the work. But a great number of Kashmīrī cultivators occupy themselves in spring and autumn in taking goods from the plains to Kashmir by contract, by weight, and on that bargain will exert themselves manfully. I once arranged my loads for the ordinary coolis, but afterwards met with some Kashmīrīs who were ready to take them by weight; these loaded themselves each with *three* of the loads that had been made up; one man carried four dozen of beer packed in cases; another load that was carried was 192 lbs.; and I have a well-authenticated case of a young man carrying 240 lbs. And this was not for a short journey, but for over a hundred miles of uneven road with many long rises and several passes, one of them over 9000 feet. In doing such feats as this the Kashmīrīs take their own time: the ten days' march they will take eighteen or nineteen days about; but they will do it all on a diet of unleavened bread or of rice.

Thus prepared with baggage and porters, we will now start from Jummoo for the journey to Kashmir; the distance is 184 miles, which will be covered in fourteen days, a day's march varying com-

monly from 9 to 15 miles. We shall divide the distance into sections according as the characters of the country change.

JUMMOO TO AKHNŪR: ONE MARCH.

The length of this stage is 18 miles; it is a long march, especially for a first day's, and it might be conveniently divided into two; Nāgbanī at 7½ miles would be the intermediate halting-place. The road, however, is easy, being altogether in the plain. For the first few miles from the city we pass through a narrow lane cut in the acacia forest, the lane bounded by tall hedges of *Euphorbia*. The forest abounds with wild pig; passing along at dusk one is sure to see several in the path, and there are spotted deer about, but they are shy and one does not often catch sight of them. Emerging from the forest we find ourselves well clear of the hills also, with the view unconfined by the lower ranges. We see in one glance a great length of the mountains that lie between us and Kashmir extending on the right; the look of them varies something with the time of year; I have made the journey oftener than once, and in different months; we will suppose it to be May, when the heat of the plains and of Jummoo has become oppressive, and one looks forward with delight to enjoy the cool air of the mountains.

In May, then, though the lower snow has melted, there remains much on the Panjāl hills. High up spread fields of white snow, with both rocky peaks and snowy ones projecting from them. In front of them are the dark forest-slopes of the Middle Mountains, which are well seen in the opening of the Chīnāb and Ans valleys. The outermost low ridges clothed with green make the foreground.

The road goes on, a well-frequented one traversed by both carts and camels; we pass over a fairly cultivated plain, rather dry in soil; we go by some Government gardens and a few hamlets and villages. As we near Akhnūr we come on the line of an important canal the Maharaja is having constructed to bring the waters of the Chīnāb to the foot of the Jummoo hill. While we were three or four miles away from the foot of the hills the soil

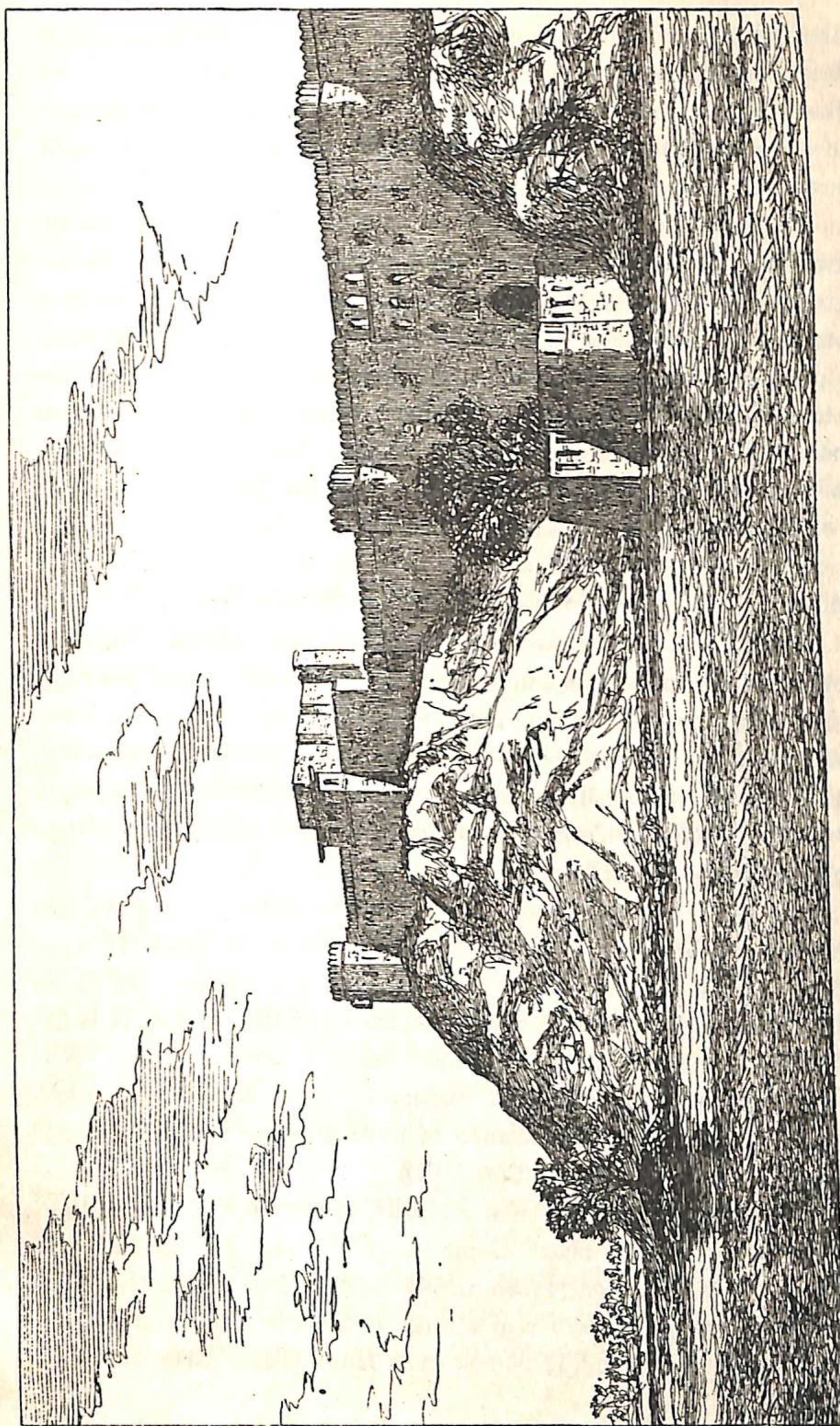
was loamy and nearly free from stones, but now, coming up northwards and again nearing their edge, we get on pebbly ground, and soon, from a gravelly bank, we look across the Chīnāb River on to the fort and town of Akhnūr.

The river is at this time swollen with the melting snows. Every day of bright sunshine on the higher mountains makes itself felt, raises the level of the water and widens the spread of it, and increases the force of the current. The passage across by the ferry-boat comes to be a serious matter; scores of people, who have been waiting hours for the opportunity, rush in on her coming to the bank, and with the cattle, ponies, and camels that have been forced on board over the bulwarks, soon fill her to overcrowding. When she puts off, weighed down and unmanageable as she is, the force of the current carries her a good half mile away in crossing the few hundred yards. Then, emptied of her freight, the boat is laboriously tracked up again for another trip. Two such journeys each way is as much as can be done in the day's work.

The appearance of Akhnūr from the left bank of the river is striking. The chief object is the fort, of which a sketch is given. It is a building of lofty walls enclosing a square of over 200 yards, with one entrance gate by the river and another on the land side. The walls are crowned with battlements of the same form as one sees in the Mughal forts throughout Hindostān. The fort was built 90 or 100 years ago by Miān Teg Singh, who held under Jummoo a jāgīr, here and at Sol, a place in the hills a few miles off. It is now occupied by troops of the Central Government, but the same family, descendants of Teg Singh, retain some of the estates and have their house in the town below.

Akhnūr is but just below where the river struggles out of the hills, and just above that part of the plains where the ground is so little above its surface that the channel divides into many. The town is built on a terrace above the river, which is overlooked by a few houses of the better sort, while the part behind is mean and dirty.

A little above the fort, on the slope of the river bank, are found traces of a former city; one sees large well-made bricks on



AKHNŪR FORT, ON THE CHĪNĀB.

the surface, but there is no building or wall remaining; the bricks are often dug up and carried away to be used again. Near this spot is a place where the river was bridged by one of the invaders of India—I think it was Ahmad Shāh Durānī—who passed his army across the Chīnāb at this place.

The inhabitants of Akhnūr are much mixed; a portion of them are of the same various castes as about Jummoo; but there are a large number besides of Muhammadans, who bear the name of Kashmīrī, and, doubtless, were originally of that nation. Unlike, however, Kashmīrī settlers in other parts, who usually retain distinct their language, ways, and look, these have lost their native tongue and speak only Panjābī, and, in appearance and character, though very different from the Dogrās, yet they are not recognizably Kashmīrī.

TIMBER-CATCHING AT AKHNŪR.

Akhnūr has two or three circumstances that should make it flourish as a town. It is where three or four roads, some bearing much traffic, converge; it is just within reach of boats that navigate the Chīnāb, this position being made use of chiefly for building boats and sending them down for sale; thirdly, Akhnūr is where the timber from the mountains, that floats down the river, is caught and stored.

This last business brings much employment and gain to the people. We saw in the last chapter how, far back in the mountains, the deodar trees were felled and cut up, and the logs rolled down to the edge to await the rising of the river. It is at this time of year, in May, that they begin to come down. No further care has been taken of them; they are left, in the first instance, to take their own chance of finding their way down that long distance of from 150 to 200 miles.

From Riāsī, 20 miles above Akhnūr, to a place as far below it, this 40 miles is the space along which the logs are caught and brought to land. Nearly the whole population of the places along the river bank, people of almost every caste, occupy themselves in the work, for it comes at a time when farm-work is

slack, one harvest having been got in and seed-time for the next not having come. The plan is to provide what is called a *sarnā*, a goat-skin carefully taken off and carefully closed wherever an opening occurred; the end of one fore leg only is left open for inflating; the skin is blown out tight, and the end fastened up with a bit of string; to the hind legs are attached loops through which the man puts his bare legs, and the stiff inflated goat-skin comes up in front of his chest; then, jumping into the river, the man balances himself on the sarnā, lying almost flat along it; by aid of his hands and a peculiar motion of his feet he can swim along at a fine rate, and fears not to trust himself to the waves and the rapids of the swollen river. Standing at a spot whence he knows the current will force him out to mid-channel, he waits till a log of timber comes opposite him, and, dashing in, he soon reaches it, and then, by the exertion both of force and skill, guides it to a sheltered nook where it may be landed and hauled up. The places convenient for this are known, and men are kept ready at each to receive the logs as they are caught, while a munshī is by to measure the timber, and give a note of its length and girth to the swimmer, who swims away with it in his turban to look out for another log. The notes representing the day's or the week's work he will bring at his leisure to the office at Akhnūr, and receive payment in proportion to the cubic contents of the timber he has brought in.

There are some thirty stations for this work within the space mentioned, including several in the branch channels below Akhnūr. A log that passes the upper ones will pretty surely be caught below; even at night, between the late summer evening and the early dawn, the timber can hardly get through the whole space before some early bird is down upon it to bring it in.

Some of the timber comes from as far away as the Chamba territory, above Pādar, where the Panjāb Forest Department fell it, having taken a lease of the Chamba Raja's forests. Some was felled by the Maharaja's Forest Department, of which for a few years I had the management. Some other belongs to contractors, to whom the right of felling has been sold. These different

properties are recognized by the marks that are cut on the logs in the forest; each owner, having his agent at Akhnūr and other landing-places, manages to collect his own; the swimmers (*tārū* is the word they are called by) bring in all indiscriminately, and the payments made by any munshī will be adjusted afterwards.

In this way thousands of logs are caught every season; 20,000 logs belonging to the Maharaja's Forest Department, have been secured in one year; these would average 20 or 25 cubic feet of timber, and would have a value of more than 20,000*l.*

Many logs get fast in the middle course of the river, become stranded, or fixed between rocks, or otherwise entangled, and are left by the receding flood. For these, on the waters lessening in the autumn, men are sent up along the river bank, to disengage them and roll them to where they may again be started, or to a place whence they will be carried down by the next summer's flood.

The next stage in the timber-business is to concentrate the logs, especially to bring down to Akhnūr those that have been caught at the upper stations. This is done on the force of the current slightly moderating (as it will when a few cloudy days lessen the snow-melting), by forming small rafts of from two to four logs each, and guiding them down between the projecting cliffs of the narrow channel, and over the successive rapids that rock-ledges at intervals have made. It is a service of some danger. Two men guide the raft with bamboo poles, ready, with their sarnās, to take to the torrent if by chance the raft should be forced against the rock. When this happens the logs will be separated, and if the men have the good fortune to escape, they will again make to them to bring them in separately, and claim the wages which for this, too, are fixed as by measurement. Great nerve and pluck are often shown in the management of these rafts, and, dangerous though the work is, accidents are not common. Collected at Akhnūr, the timber is either sold there or made up into the larger rafts — of 50 or 60 logs — of which the lower course of the river will allow the passage, and floated down some 50 miles, to Wazīrābād, on the Grand Trunk Road, whence it will be distributed over the Panjāb.

The felled timber used to be very nearly all deodar, that being the wood that stands best against the destructive white ant; latterly, I believe, they have been trying *Pinus excelsa* for sleepers for the railway, and some number of that tree has been cut for the purpose; young trees of *Pinus longifolia* have always been sent down for the roofing of the small houses of the natives. But beside what has been felled, a considerable, in some years a wonderful, amount of waifs arrive by the river, of trees that have fallen and been carried down by snow-slips, or in any way whatever have found their way to the river side. This is called *ror;* it belongs by old custom to the government of the territory in which it may first be caught and brought to bank. The Maharaja gets the lion's share of this on the Chīnāb, but a little may pass through to the British territory. Felled timber that has through carelessness remained unmarked goes the same way. A few trees of pencil cedar from forests high up the mountains find their way down; they are generally ten or twenty feet long and four or five feet girth at bottom, quickly tapering.

Besides the regular gradual rise of the river by the snow melting, induced by a bright sun shining on the high mountains, there are apt to come, in the rainy season, more sudden floods, which may bring the waters up to a much higher level than they reach by the other mode of rising. That first kind of rise is called "charhā"; the flood is called "har." In the *charhā* the water is cold, coming fresh from the snows, and its colour is milky from the glacier-mud. The *har* is brought on by rain; two or three days' continuous rain over any large area of the hills is enough to cause such a flood. According to the area it originates in—to the character of the rocks occupying that area—is the colour of the water black, brown, or red. It comes suddenly and as quickly subsides, lasting in general but a few hours.

While the steady rise and continuance of the waters in the *charhā* is most favourable to timber-catching, the *har* may destroy all the work that has been done. The river will sometimes rise to the timber-heaps in the store-places, and float off

and carry away numbers of logs. During the force of the flood no swimmer can ride his sarnā; none can venture on the water; the river for a time asserts itself and is master, and no one can interfere with his doings while he carries off the carefully-stored timber, the accumulation of much human labour, and scatters it here and there on the banks, and leaves it on the shoals of the lower part of his course.

AKHNŪR TO RĀJAORĪ: FIVE MARCHES.

Now we must leave the gay scene of the swift river, dotted over with the swimmers on their strange-looking steeds, riding in pursuit of the logs—all which we can see beautifully from the windows of the Bāradarī on the summit of the fort, and face the burning sun for another march. Five hot marches await us over ground of one general character, over the rough country of the Outer Hills, what we have already in the account of their physical characters in some measure described. We will therefore treat of these together, and not separate each day's doings, though a list of the marches will be useful; they are numbered from Jummoo:

	Miles.		Miles.
2. Akhnūr to Chaukī Chorā ..	13½	5. Dharmsāla to Syālsūī	9
3. Chaukī Chorā to Thandāpānī,	13	6. Syālsūī to Rājāorī	14
4. Thandāpānī to Dharmsāla ..	9½		

The road leads straight away from the river north-westward and for four miles is still in the plain, but it is a plain gradually rising; then we reach the outermost line of hills and enter them by a valley, going up the boulder-covered stream-bed; the cliffs and hills on each side rise higher, and make the valley narrower, as we go on. The hills are covered with a forest or brushwood, which harbours undisturbed many a peacock, whose scream sounds strange in conjunction with the voice of the cuckoo, who also at this time here makes himself heard. After a bit we rise to the level of the broken plateau that occupies the space between the outermost ridge and the ridge of Kālīthār, and here is the stage called Chaukī Chorā, a scattered village, with little portions

of land cultivated among the steep and rocky area. Beyond, the road rises up Kālīthār, going partly over bare rock, which is here much exposed. The form of the ground in this neighbourhood was carefully described before, so we will not tarry, except to say that the road goes through a little nick in the ridge of Kālīthār, and then winds or zigzags down the steep escarpment, from the foot of which a few miles of road, which is comparatively level, with the exception of the deep gulley of the stream, bring us to Thandāpānī, another halting-place, at the beginning of the next innermost set of hills.

These we have to traverse in the following three marches—two short ones and a long one. First we go along in front of a ridge of sandstone in upright layers, with the beds vertical, these sometimes making the scarp of the hill, sometimes projecting out from the ground as it were a wall, and at other times we see them fashioned by weathering into curious fantastic shapes. Then entering we thread our way among a maze of low hills, parts of successive ridges divided by narrow hollows; the surface is nearly all covered with brushwood and there is little tillage seen, here and there only are scattered houses met with.

At this time of year the ground is dry, and all the way from Akhnūr the road has been hot and thirst-bringing; the sun's heat being reflected from the rocky ground tells on one with double force. A good charitable custom of the Hindūs brings relief to the traveller. On many a spot in the hottest part, perhaps at the summit of one of the steep rises of the uneven road, will be found a hut where cool water kept in clean porous vessels is at the service of any who may ask for it. The man in charge is probably a Brahman, so that people of every caste can take water from his hands; he will maybe have been placed there and paid by some well-to-do Hindū, whose piety prompts him to this good work. It is the Brahman's business to bring the water from the nearest stream, which may be a long walk off, and distribute it to wayfarers. When the rains come and water is to be found in every pool and little stream, the establishment will be no longer kept up.

In the march from Syālsūī onwards we crossed the boundary of Hindūs and Muhammadans, leaving the former and entering the country occupied by the latter. The Hindūs about Dharmsāla and Syālsūī were in great part Thakars; that caste has evidently been of chief importance here, and has not been so much overshadowed by Miāns as it has farther east. The Thakars' houses, usually high up on the tops of the hills, are solidly built of stone, and have something of the character of forts; they even bear the name "kot," an old word for fort.

At last we get clear of these hills, and come into the valley of the Western or Mināwar Tavī, which is at this time a stream of moderate volume flowing over ridges of rock, often making deep pools between them which are very favourable to the fisherman.

A strange way of slaughtering the fish is sometimes practised here by the natives. An earthen vessel is filled with the milky juice of the plant (*Euphorbia*), which bears the name of *tor*, and, attached to a long pole, is moved about in the pool; the juice getting mixed with the water blinds the fish, and while they swim here and there, not knowing which way to go, they can easily be speared.

Continuing up the valley by the left bank of the river, between low spurs of the hills, in a few miles we come opposite to the town of Rājāorī. This place has been spoken of in Chapter v. The old royal garden there described, opposite the town, has become the halting-place for travellers, chiefly for the English. We have here come into the Bhimbar route to Sirīnagar frequented by them, and from this place onwards our own road coincides with it.

The town of Rājāorī shows a front to the river of large stone buildings, some of them ruinous. There is a mosque of the time of the Emperors, now used for a wood store: the rest-houses of the same period have been mentioned before. Then, besides these regal works, are buildings of different sorts raised by the former Muhammadan Rajas of Rājāorī.* It must be remembered that

* Probably these regions are the only part of India where Muhammadan rulers have borne the title of Raja.

the Delhi Emperors, though having their road to Kashmir through this part, still left the country in the hands of the native Rajas, who were bound to do all they could to facilitate the royal journeys and the transmission of the loads of fruit from Kashmir to the Delhi Court. The Bhimbar Raja held his country on the same terms.

The Rajas of Rājāorī were Muhammadanised Rājpūts. The early ones were of the tribe of Rājpūts called *Pāl*, that caste to which belonged the Hindū Rajas of Balāwar and other places on the east of Jummoo. The Muhammadan Pāl of Rājāorī were succeeded by Rajas (also Muhammadans) who belonged to the *Jarāl* tribe of Rājpūts; this was seven or eight generations back; these rulers also have passed away, but there are in the neighbourhood both Hindūs and Muhammadans of those two castes.

The Rājāorī rule extended north and south 20 or 25 miles, and about 30 miles from east to west; its northern boundary was the Ratan Ridge; to the south the country of the Bhimbar Raja bounded it. The revenue I am told was only 16,000 rupees; but for all that the money-income of the country was so small the Rajas have left some marks of their rule; there is what was once a large fine house, their residence, in the town of Rājāorī; of part of this the roof is fallen, but the river front is preserved and is used for offices. Near it is the mosque they worshipped in; this also is gone from its first use, and is now made use of as an occasional resting-place for European travellers, when, from the swelling of the river, they cannot get across to the bāradarī in the garden on the left bank. Higher up is the Rajas' burial-place; here one tomb was pointed out to me as Raja Āgā Jān's. Āgā Jān was ruler when the Sikhs took the country; they imprisoned him and put his younger brother on the throne, who sat on it till he was obliged to hand it over to Maharaja Gulāb Singh. When, as explained in Chapter I., all of these territories that had not before been acquired by Gulāb Singh were transferred to him by the Treaty of 1846, there came an end to the Rājāorī rule; the Raja ultimately submitted without resistance, and was pensioned. He is now dead, but his son still receives

something through the British Government, which he enjoys at Wazīrābād.

Rājāorī has one conspicuous building raised by its last, the present, rulers. A large temple, elevated on a rock by the river, shows to all that Hindū power has again spread thus far west. As another sign of this, the Dogrās have changed the name of the place to *Rāmpūr*, thus designating it after one of their gods; this new name has displaced the old in official dealings, but not in the mouths of the commonalty.

Rājāorī to Sirinagar: Eight Marches.

We have hitherto in our journey been among the Outer, the Lower, Hills; in these next marches we shall get over the higher ranges of mountains, those that are the great barriers of Kashmir. The first two days' march from Rājāorī will take us northward over the Ratan Ridge by a pass that is called the Ratan Pīr; the next four will lead us eastward through the main Panjāl Range (of which the other was a branch) by the pass called the Pīr Panjāl, and will bring us down to the level and out into the wide opening of the vale of Kashmir; the last two are wholly within that valley.

The following is a list of the eight marches, still numbering from Jummoo:

	Miles.		Miles.
7. Rājāorī to Thanna	14	11. Alīābād to Hīrpūr	14
8. Thanna to Baramgalla ..	10	12. Hīrpūr to Shapeyan	6
9. Baramgalla to Poshiāna ..	10	13. Shapeyan to Kahnpūr ..	15
10. Poshiāna to Alīābād Sarā ..	11	14. Kahnpūr to Sirīnagar ..	12

In the first march, from Rājāorī to Thanna, we keep for 14 miles in the same not-wide valley, following up this western Tavī stream, rising by a gradual incline. The ground of the valley is all terraced and made into rice-fields, which at this time are flooded with water led from the stream in preparation for the sowing, which will be done a week or two later. The valley is closely-bounded by spurs of hills, which change their look as we near th end of the march, for we then get among a higher class

of hills, such as we have all along called the "Middle Mountains"; at Thanna we have reached to the foot of the slope of the Ratan Ridge itself.

In the march from Thanna to Baramgalla we go over the Ratan Pīr.* It is a good steep pull to reach the summit, which is 8200 feet above the sea; there is hardly any depression in the ridge at that spot. On some of the slopes the mountain is thickly covered with forest, a forest of much variety and beauty. Box grows here largely; it is cut and sent to the towns, where it is mostly used for making combs. On the higher parts of the ridge one meets with numbers of the great black and grey monkey, called *langūr*.

From the Ratan Pīr one looks north and north-eastward on to the Panjāl Range, and obtains grand views of its mountains. The descent also gives beautiful prospects, both of near forest views and of the more distant hills. The road is rough and difficult; one's pony, that was useful for the ascent, had best be allowed to go down the hill without a rider.

Baramgalla, which is the halting-place, is in the valley of the stream that rises near the Pīr Panjāl, and with many others goes to form the Pūnch River. It is shut in closely by spurs of the hills.

The next march, from Baramgalla to Poshiāna, is along the bottom of the narrow valley, among the large rounded stones of

* In these hills the word *Pīr* has come to be used more or less generally for Pass. The history of its acquirement of this meaning I conceive to be this. *Pīr* in Persian means first, *old*, or *an old man*, and thence a saint or *faqīr*. It is common for faqīrs to establish themselves on Passes for the sake of contemplating the works of God and of receiving the alms of travellers; when any noted holy faqīr died on a Pass, the place became sacred to his memory, and was often called after him, his title of *Pīr* being prefixed; at last it became so common for every important Pass to have a name beginning with *Pīr* that the word acquired the secondary meaning of Mountain Pass.

Ratan Pīr must be called so after one Ratan, which is a man's name among the Hindūs. As to Pīr Panjāl, the latter of the two words is applied to a great mountain ridge, at all events to the one we are coming to, I am not sure whether it is a general word for a range in any language. Pīr Panjāl now means simply the Pass of the Great Range. There was, however, at one time a faqīr who lived on it and bore the title of Pīr. Bernier, who crossed in Auranzeb's time, says there was a hermit on the Pass who had resided there ever since Jehāngīr. Bernier wrote this in 1665. Jehāngīr reigned from 1605 to 1628; by this the hermit would have dwelt there thirty-seven years at least. I imagine it was from him that the Pass acquired the first word of its present name.

the stream-bed. The hill-sides are too steep for the road easily to be made along them, so the traveller must keep close to the river, which has to be crossed about thirty times, as it nears alternately the right and left bounding cliffs. A series of little wooden bridges are prepared, which are good enough for foot-passengers and for an unladen horse, but ought not to be ridden over.

At last we leave the bottom of the valley and rise by a steep ascent on the north, of some hundreds of feet, to Poshiāna. This is a small village, the highest in the valley; it is inhabited by Kashmīrī.

The march from Poshiāna to Alīābād leads us over the chief Pass. The road first contours to the base of the valley; from there the rise to the Pass may likely at this time of year—the latter part of May, we will suppose—be made by keeping in the ravine, on the snow-bed that now fills it. If this has melted, one must rise on the left and keep the narrow path which goes along the hill-side at some height above the bottom.

In rising to the level of the Pass, which is 11,400 feet above the sea, we go through the stages of fir and birch wood, and come to where the slopes are grassy, and the hills above are of rock and fallen stone, with many snow-beds remaining yet unmelted.

One time that I came here I found the Pass, and the ground and the snow for two or three miles' distance, strewn with dead locusts, which about the middle of May had been destroyed by the cold in an attempted invasion of Kashmir.

Between the Pass and Alīābād there intervene some miles of a very gradual descent. From Alīābād to Hīrpūr, the next stage, the road makes an irregular descent of more than 2500 feet, over rough, and in wet weather slippery, ground. The hills rise up boldly from the bed of the stream (which here, of course, flows towards the valley of Kashmir) for some thousands of feet. Often broken by rock and cliff, elsewhere covered by forests of pine, spruce, and silver-fir, they rise above where these can grow and show an unusually great extent of ground covered with birch-

trees; above this are the grassy summits of the spurs as visible from below; one must rise on to the spurs, and trace them back away from the valley, to get to the region of stone and rock, which would be reached at about 12,000 feet altitude.

The stream, which flows a little north of east, receives other mountain-streams from both sides, and becomes an unfordable torrent. Descending and crossing it by a bridge, we come to comparatively level ground, clear of the steep mountains. For the next few miles our way is along a charming woodland path where the ground is covered with wild flowers, among them violet, strawberry, forget-me-not, and buttercup, and the fir-wood is varied with many trees and shrubs in bloom.*

The hills on each side get lower, and as we near Hīrpūr we find ourselves between what, as compared with the mountains, are mere banks that frame, rather than confine, the view, and let us see a portion of the long-looked-for country of Kashmir.

But a small part of the vale itself appears; we look across it on to the complicated branched mass of mountains connected with the great snowy range that bounds Ladākh. One knows not how to call it—a wall of mountain—a serrated ridge—a rugged-edged mountain-mass; none of these express what one sees if after the first glance one looks, when the light may favour us, carefully to find out the details of what comes to view. The nearest spurs are 25 miles off; they can hardly be distinguished from out the mass, though they project far in front of it. Behind them, nearly 40 miles off, is a distincter mass of dark mountains which are some 12,000 feet in height; their projecting spur-slopes and the ravines alternating with them can even at this distance be made out. Above this dark mass we see a great extent of pure white snow-covered ground, from out of which rise great snowy peaks. One of these that stood prominent was 50 miles away, and some points within our view were nearly 70.

This was the first great view of Kashmir. But when we

* It is a remarkable fact—one that has been noticed by Dr. Falconer and Dr. Thompson—that on the Kashmir side one does not meet with the oak and rhododendron, although the elevation of the ground corresponds to that where, on the outer side of the Panjāl hills, these trees are abundant.

reached Shapeyan, the next stage eight miles on, we came to where we could look back, and on, and all round, and still see mountains without a break encircling the vale. The range we had passed through with days of labour seemed strangely near; it bore great snow-beds with bold rocky peaks projecting as it were through them; in front were dark forest-covered slopes. Opposite was the same great line of mountains we had seen from Hīrpūr. The bounding hills of the far ends of the valley, seen only at times of clear atmosphere, complete the ring-barrier of Kashmir.

Shapeyan, the first halting-place well within the vale, is a wooden town; through every lane of it water from the mountains flows in narrow canals. From Shapeyan, Sirīnagar lies north, 27 miles distant, a two days' journey. The intermediate places are Rāmū, at 12 miles, and Kahnpūr, at 16; either of which may be chosen to halt at.

The road is now nearly level, only some low flat-topped hills are crossed. On each side fine prospects of the mountains extend; on the left, of the forest-clad hills overtopped by peaks of rock and snow; on the right, the farther mountain-range that lies beyond the plain; but in parts the road is among the village groves where the eye, not reaching to the mountains, is content with the nearer homely beauties of shady plane or walnut trees, and wild rose-bushes luxuriant in their bloom. As we cross the last of the low hills we look from that higher ground over the low flat, and can see where Sirīnagar is situated; the position of it is marked by two isolated hills, one of them surmounted by an ancient temple, the other crowned with the buildings of a fort. The last few miles of our ride are across the flat, between rows of tall poplars. We reach the city at the bridge that is the highest up of seven that span the river. As we cross it and see the boats plying up and down, the houses crowded on to the river-bank, of irregular form and varied construction, whose low-sloping roofs with their wide eaves throw deep shadows, the spiry pinnacles of mosques, and the bulging domes of temples, at once we know that in this high valley a busy city exists of unusual aspect and rare picturesqueness.

CHAPTER VIII.

KASHMIR.

POSITION AND SIZE — THE PLAIN OF THE RIVER ALLUVIUM — THE PLATEAUS OR KAREWAS — CLIMATE OF THE VALLEY — THE COUNTRY PEOPLE — THE PEOPLE OF THE CITY — THE CITY OF SIRĪNAGAR — ENVIRONS OF SIRĪNAGAR — SUMMER RETREATS.

POSITION AND SIZE.

THE country of Kashmir has justly a reputation for something distinctive, if not unique, in its character. Its position and form together are such that there is no parallel to it in the whole of the Himalayas. It is a plain embedded among the mountains, a wide vale enclosed by mountain ranges, lying at such a height above the sea as on the one hand to be of a climate entirely different from that of India, being saved from the heat that parches its plains, and on the other hand to be free from the severity of cold that visits the more lofty plateaus or wide valleys that are found more towards the centre of the mass of mountains.

Let us now look carefully at the position and extent of this country, and by figures help ourselves to understand the reasons of its special characters. Sirīnagar, which is but a very few miles from the central point of the Kashmir Valley, is in lat. 34° 5′ N. and long. 74° 48′ E. Both the valley itself and the ring of mountains that surround it are irregular ovals. The position with regard to the great mass of mountains and to the plains of India is this:—the long diameter of the oval, lying north-west and south-east, is parallel with the general run of the chief ranges in this north-western portion of the Himalayas; the distance of the valley from the plain of the Panjāb varies from 50 to 75 miles; that is to say, there is a mass of mountains of that width interposed between the two plains. The

size of the country may be measured in two ways, one reckoning from summit to summit of the mountains that bound it, the other counting only the valley, that is the nearly flat part, that lies enclosed by them. Taking, then, the ring of mountains, we find that the length of the irregular oval which the line of their summits forms is 116 miles, and that the width of it varies from 40 to 75 miles, the area within this rocky fence being about 3900 miles. The part which is comparatively low and flat, that which may be called the vale, is about 84 miles long, from north-west to south-east, and in width it varies from 20 to 25 miles; it has an area of 1800 or 1900 square miles. In level, what has been counted in with the valley varies from 6000 or 7000 feet above the sea down to 5200 feet; the lowest portion is along the north-eastern side; the average of the whole valley may be taken at about 5000 feet above the level of the Panjāb plain, near 6000 feet above the sea. The mountain ridge, or rather the combination of mountain ridges, that surrounds Kashmir varies much in height. The loftiest points are on the north-east side, where some peaks rise to close on 18,000 feet. Where the mountains curve round the north-west end of the valley, 12,000 and 13,000 feet are the average heights. On the south-west side, the great range called the Panjāl, whose summit-ridge is commonly 14,000 and 15,000 feet high, for a length of some 80 miles separates Kashmir from the Panjāb. On the south-east, a continuation of that range, at a somewhat less elevation, curving round unites with the range on the north-east. It is near the southernmost part of the oval that the lowest portion of the mountain occurs; for a few miles the ridge is something under 10,000 feet.

By the ring thus almost completed the valley is enclosed. The one gap left is the gorge by which the drainage of the valley and of the inside slopes of the mountains escapes to the sea. Towards the north-west end of the Kashmir Valley, the waters, having collected into one great stream, flow out by a ravine, or an extremely narrow valley, flowing in it for a long way before they reach the open plains. First they flow west; then to the north-west; and then, with a sudden turn, they come due south, till, after a course

of 190 miles * from the Kashmir mouth of the gorge, they reach the plains near Jhelam, having fallen in that distance 4000 feet of vertical height.

Returning now to the Kashmir Vale and looking more closely to the form of the ground, we shall find it to be divided naturally into two parts—the plain of the alluvium of the river, and the plateaus or platforms of older alluvial or lacustrine deposits; these must be spoken of separately and in some detail.

THE PLAIN OF THE RIVER ALLUVIUM.

The streams which drain the south-eastern end of the barrier-mountains, flowing from many directions, unite near where the town of Islāmābād stands, and form a river which, from that spot onwards, through the length of the valley till the gorge before mentioned is reached, is navigable. This river may be called the Jhelam, after the name given to the same waters lower down; the natives of the country call it the Behat or Vehat; an older name, still used by those of them who follow Sanskrit literature, is Vedasta.

It is by the banks of this river that the flat plain lies, extending along the north-eastern side of the valley from Islāmābād north-westwards for more than 50 miles, with a width varying from two or three to fifteen miles. The levels are 5400 feet at Kanebal by Islāmābād, 5235 feet at Sirīnagar, and 5180 feet at the farthest point, by the shore of the Walar Lake; these show a fall of 165 feet in the first 30 miles, and 55 feet only in the next 24 miles; to the eye it is a complete level, but it does in truth slope, in the general direction of the river-flow, to an extent corresponding to the fall of the river. The flat is just like the alluvial flats that make the meadow-lands by the side of our English streams; its surface has been formed, as theirs has been, by deposition of sediment on the water overflowing the banks at flood-time; here, however, it has not been kept in meadow, but has to a great extent been brought under the plough.

* Seventy miles from Bāramūla to Muzafarābād; 120 miles from Muzafarābād to the Plains.

The plain is narrowest 10 or 12 miles below Islāmābād; about Sirīnagar and beyond it is wide. In this last part great portions of the flat are a marsh covered with water in spring and summer, and left dry in winter. Other portions are more permanently covered and make weedy lakes; at the north-west extremity of the 50 miles of length there is a large expanse of water called the Walar Lake, some 10 miles by 6 in extent.

The river is much used for navigation; it is the great highway of Kashmir. The goods that come from India by the Jummoo road, over the Banihāl Pass, are brought by land carriage—by coolis, ponies, or bullocks, as it may be—as far as Kanebal*; thence boats take them to Sirīnagar. The boats float down with the stream at the rate of a mile and a half or two miles an hour. The course of the river is winding; often it touches the rocky spurs on its right bank, again turning off it may near the plateaus that on the opposite side bound the flat. When one has had many days of rough marching, over roads where every footstep has to be looked to, how enjoyable is the change to the smooth movement of the boats as they glide slowly down the stream, just helped or guided by the paddles of the boat people! Delightful then one finds it to travel in this easy way and watch the varying view as, in following the bending river, the boat now faces one mountain spur backed by loftier hills, now turns to another of different beauty, or else shows us the opposing line of snowy mountain-peaks.

The immediate banks of the river are level and unvaried; their height above the water may be 15 feet when the river is low, as in winter; but on the snow melting the river rises, and if at that time come two or three days' rain, the additional volume of water is enough to bring it up to the edge and make it overflow. Against this the bank is all along artificially raised a few feet, but a heavy and continuous fall of rain will make the water overtop that bank as well, and produce a flood over all the flat, which may cause enormous damage to the crops over an area of many square miles. This flooding extends down to Sirīnagar;

* The affix *bal*, found as the termination of so many names of places in Kashmir, has a force the same as that of *stān* in Persian, meaning "place."

the waters, however, do not enter its streets, for the whole space occupied by the city is made-ground, being raised some feet above the natural level by the artificial accumulations of centuries, as by the building and destruction of houses of successive generations. The environs, however, suffer from the flood; the part where the English visitors dwell is sometimes covered; the bank constructed to defend it may give way or be overtopped. I have known 6 feet of water over the plain behind the visitors' houses, and have gone in my boat up the great poplar avenue with that depth of water beneath me.

A few miles above Sirīnagar, on the left bank, is a low marsh called Shalūn, fed by mountain streams. This connects with the river by a channel which is kept closed by a door that opens river-ways; the object of this door is to prevent the river flood from spreading to the marsh and covering the low ground at its edge; it has happened that on the receding of the river a second flood was caused in it by the water of the marsh (which rose later) flowing out by the door that opened into the river. Another tract of water that is banked off is the Dal. This is the lake at the back of the city on the east; it receives its supply from springs and streams; a great bank separates the low land that edges it from certain side channels of the river, but there is a passage left for the sake of navigation, and a door that opens to the river. The lake changes its level but little; there is usually a flow of its waters out through the passage; only when the river is very low a temporary dam, that stops the passing of any boat that cannot be dragged over it, is made to prevent the lake being too much drained; when the river rises with a flood the gate shuts of itself and secures the lake district from inundation. A lock is here much wanted as well as sluices, for the regulation of the outfall and the maintenance at all times of navigation.

A stream of good volume, named Dūdgangā, joins the river on the left bank at the city of Sirīnagar; it is made up by the waters of several smaller ones that drain the south-western mountains. Farther down, both on the right and left bank, the mountain

streams fall into marshy expanses that are not permanently covered by the waters. These marshes are separated by an artificial bank from the river, but certain channels—themselves banked for some distance—allow of communication between. Small villages are seen on little pieces of ground slightly above the level of the marsh, whose inhabitants get their living as much from the water as the land around. In winter a great part of the ground becomes dry and affords some pasture. The whole space is a breeding-ground for mosquitos, which at times are exceedingly troublesome.

The river continues on, embanked, in a general north-westerly direction. Various portions of ground, of the low marsh level, have been recovered by an embanking. Deposition of silt also is occurring, and tending to raise what is still subject to inundation, and to carry the channel of the river farther and farther out into the Walar Lake, with which these marshes communicate, or into which they, so to say, melt.

The Walar Lake is by far the largest piece of water in Kashmir. Its boundary in some directions is ill defined; but the dimensions before given, 10 miles by 6, fairly represent its general length and breadth. The depth of the western and north-western part, which is away from the marshes, is about 14 feet, but where the streams debouch into it the depth is less and is continually lessening; formation of land even is going on. For about half the way round the lake mountains bound it. These are spurs, of heights varying from a few hundred feet to 5000 feet above the lake level; they are connected with ranges from which a few peaks rise to the snow-line. Along the northern shore of the lake, in front of the mountains, is an edging of sloping ground covered with villages—the district called Kohiyāma, of which Bandipūr is a well-known village, from its being, so to speak, a port. This cultivated land is partly on the slope and partly on the flat that has been recovered from the lake. The eastern and southern boundaries of the Walar Lake, as before said, are indefinite; on the south-western side there is a flat whose edge is more distinct.

It is at the south-west corner that the water flows out from the lake and the river recommences. A mile or two below is the town of Sopūr, built on both sides of the river with a connecting bridge. The river goes on, winding through a flat country like that above Sirīnagar, and at about 18 miles from the lake it reaches Bāramūla, where the gorge begins and the character of the stream immediately changes. Thence its course is over rocks, in falls and rapids, and there is no possibility of further navigation along it. This is the outfall for the whole drainage of the valley; all the streams had joined the river before the gorge was reached.

One little lake we had passed without notice. This is Mānas Bal, which lies a mile away from the right bank of the river, under the shelter of an isolated hill a few hundred feet in height. The lake is two or three miles long and a mile wide; the depth of it is greater than that of the Walar; 47 feet has to my knowledge been measured, and in parts the depth may be more. There is a channel connecting it with the main river.

Thus we see that the flat which extends along the north-east side of the valley for a great part of its length is partly land and partly water, but where the surface is watery the land is not far beneath. We now turn to the higher ground of the vale.

THE PLATEAUS, OR KAREWAS.

Karewa is the Kashmīrī word for these particular plateaus, whose characters will now be explained. In the dearth of descriptive geographical terms in variety it may be as well to make use of it.

The karewas are plateaus of alluvial or lacustrine material. Their soil for the most part is a loam or a loamy clay. They are divided from each other, sometimes cut into strips, so to say, by ravines of from 100 to 300 feet in depth; occasionally they are surrounded altogether by lower ground, but more generally they connect on to some of the mountains that bound the valley. Karewas and their dividing ravines occupy a width, varying from 8 to 16 miles, along the south-western side of the

valley for a length of about 50 miles, from near Shapeyan to the river-flat between Sopūr and Bāramūla. Beyond Sopūr, again, the north-western end of the valley is mostly karewa ground. Lastly, on the north-east side of the valley, across the river, on its right bank, are spaces of karewa; in some cases there are in recesses made by retiring hills, in others they project out from spurs.

We must now make a distinction between two kinds of karewas. Of the first kind are those which on their summits make a table-land so flat as to the eye to seem perfectly so. Of the second are those which slope up continuously, but with an increasing slope, to the mountains.

For an example of the flat-topped karewas we may go to Pāmpūr, a small town five miles above Sirīnagar on the right bank of the river. The space included between the river and the semicircle of mountains to the north and east, which space constitutes the *pargana* or "hundred" of Vihī, is almost entirely karewa; it is a flat table-land about 150 feet above the level of the Jhelam and its alluvial plain, ending towards the river in a bluff, partly worn down to a slope by weathering. The table-land is cut through by narrow valleys; these contain, and have been made by, the streams that carry away the drainage of the half ring of mountains; here but a small area, and that of not very high ground, is thus drained; the streams therefore are small and the ravines they have cut not wide. The surface of the karewa is dry and quite bare of trees; its position is not such as to make it receive a great rainfall, also there must be a natural deep drainage of its soil to the side valleys and the end cliff, so the moisture quickly leaves; still it will bear some crops. Some miles south of this, on the other side of the river-flat, is the karewa of Pāyach; this is in form a triangle, whose base is six miles and perpendicular four miles; it is an isolated plateau, entirely surrounded by low land, having the alluvial flat on one side, and on the other the broad valleys of streams that drain from the Panjāl. Behind Islāmābād is another good specimen of the flat-topped karewa. There a hill of limestone,

separated by some miles from the mountains, rises immediately behind the town to a height of a few hundred feet. The space between that hill and the mountain spur that connects with the great ridges—an area of some six square miles—is a nearly level table-land, about 5800 feet above the sea, 250 feet higher than the stream valleys on each side. This space is extremely arid; with difficulty can anything grow on it. Works have been begun for bringing water from higher up the northern valley, along the hill-side, to afford irrigation to this ground, which, with that aid, would be sure to bear good crops.

We now come to the sloping karewas. I think that all the karewas that occur along the south-west side of the valley belong to this class. By Shapeyan there is a large tract of ground sloping to the north-east from a height of 7000 feet down nearly to 5500. This may perhaps be called a karewa, though its surface is not so regular as that of most, and its slope seems to be radial, like that of a very flat cone; more accurately perhaps it might be called an alluvial fan on a very large scale. Watercourses are led over it from the hill streams, and they produce such fertility that the tract is crowded with villages. From Shapeyan if we were to go, first in a northerly and then in a north-westerly direction, to Sopūr, edging the hills, we should cross alternately karewas and low valleys. The karewas start from spurs of the mountains and extend out north-eastward, sloping slightly in that direction; the slope of them is greater near the hills and less away from them, until the outer parts get like the flat-topped karewas described above; the level of them may be taken at 6500 feet or rather more at their beginning, and they decline to about 5400 feet. The dividing valleys are sometimes narrow steep-sided ravines, with just a little width of green at the bottom, of land watered by the streamlet; other valleys, where a great amount of drainage has collected and formed a large stream, are wide or become almost plains; these, by the stream-bed, are apt to be pebbly; they, too, slope gradually to the north-east.

Over the surface of the karewas water has sometimes been brought for irrigation, and then a fertile tract is the result; but

more commonly the cultivation of them depends on rain alone, and in that case the yield is precarious. The Panjāl ridge supplies by its various streams an enormous amount of water, some of which is utilized, but to bring watercourses over the higher plateaus is difficult; as a rule, they are left to the chances of rain, and only the intervening valleys or the lower parts of the karewa are fed from the streams.

The north-western end of the valley, that part beyond the river, the district called Kāmrāj, I am little acquainted with; I believe it to be chiefly karewa land, cut into by various streams which unite with the drainage of Lolāb and Utar to form the Pohrū River. This is a river of but slight fall, it has formed or helped to form a wide low-level flat that may almost be classed with the river-alluvium plain. This flat makes the pargana of Zainagar, a fine plain, six or eight miles across each way; it is high enough to be clear of all the river floods, but not so high as to be drained dry like the karewas. Good crops here are grown with rain moisture only.

We have now finished our first survey, that which takes note of the form of the ground, of the vale of Kashmir; this which we have gone over is the part that, with the addition of a few high valleys, is peopled. Let us now consider some other circumstances that affect the country as a dwelling-place, and then pass on to look at the people themselves.

CLIMATE OF THE VALLEY.

In the absence of any continuous and complete set of meteorological observations, I must content myself with speaking in a very general way of the climate of the inhabited parts, and under this same heading shall say a little about the effect it has on the growth of the various crops.

In latitude, Kashmir about corresponds with the following places:—In Asia, Peshawar, Baghdad, and Damascus; in Africa, Fez in Morocco; in America, South Carolina. But the elevation above the sea, of 5000 and 6000 feet, gives it a far more temperate climate than what any of these enjoy.

A rather cold and showery spring, which may be taken to include March, April, and part of May, is succeeded by a summer a few degrees hotter than a warm English summer, with much more continuous fine weather. The four or five months from May to September are a good time for all whose fate may lead them to the country; they are enjoyed alike by natives of India and of Europe. In some years, indeed, the temperature of the lower parts of the valley rises several degrees above what Englishmen are used to in their own country, but as compared with India in the hot weather the advantage of Kashmir is enormous; at the worst the heat is of that stage when, in the plains of India, one would begin to think about using punkahs, and this heat is in most years soon reduced by storms.

Immediately about Sirīnagar, which has lakes or marshes bordering on or not far distant from it in nearly every direction, the heat of July and August is apt to make the air somewhat feverish, enough so, perhaps, to induce a return of intermittent fever to those who had contracted it in the more trying climate of India, and even to originate the disease; a move of a few miles, however, will take one to drier parts, which are quite free from a tendency to fever.

As to moisture, the country is intermediate in position between that which is deluged by the periodical rains and that which is arid from the want of them. The monsoon, which, coming from the south-west, breaks with force on that side of the Panjāl Hills, is almost completely intercepted by them and prevented from reaching the interior of Kashmir. In July and August one sees the storm clouds collected round the summits of those mountains, and knows that they indicate that the season of the rains has commenced in the tract beyond. Now and then the water-bearing clouds force their way across and precipitate their moisture on the slopes of the Kashmir side; for this reason the karewa country on the south-west, especially the higher part of it, receives a greater rainfall than the river-alluvium flat on the south-east. The mountains beyond again, those that divide Kashmir from Ladakh, receive a good deal of rain. May be, some

moisture passes over the Panjāl ridge without precipitation, and becomes condensed on reaching the yet higher range beyond; or it may be that moisture evaporated from the valley itself gets carried away and deposited on contact with the mountains on the north and east. Certain it is that while clouds collect and storms rage and rain falls on the two ranges of mountains, yet the centre of the valley and the edge of the north-eastern hills—where, for instance, Sirīnagar and Avantipur and Islāmābād stand—are comparatively free from rain. But occasionally the rain-clouds spread over the whole area, and give a supply of moisture enough to bring on those crops which depend on rain, and to bring down the temperature of the air.

The climate does not allow of a complete double harvest as in the plains of India and the lower hills, but still with some grains two crops can be got off the same land. Barley, sown about November, will ripen in the middle or end of June; after that, or after rape, maize or millet or some of the pulses may be sown. It is not, however, the common practice thus to take two crops from the land; those crops that belong to the autumn harvest are usually grown on fresh ground; but doubtless with a greater demand for land the custom would spread, at all events in favourable spots. Neither wheat nor rice allow of a second crop the same year; they both occupy the soil for too many months. Wheat, which is sown in the late autumn, ripens about the middle of July; it is not of a good quality, probably from too great moisture in the soil, for it is grown almost entirely on the river alluvium. Rice, which is sown at the end of May or beginning of June, as well as the other autumn crops, maize, millet, &c., will ripen in October. Wherever water can be got for irrigation rice is grown, and without irrigation it cannot be grown. Rice is in Kashmir the most important crop of all; though raised successively from the same ground, it yields a great return. It is the common food of the Kashmīrī, of those who live in the towns, and of those of the country people who can grow it themselves; the cultivators who have no irrigated land must content themselves with what of the maize or of the other cheap grains falls to their share.

Soon after the autumn crop has ripened and been cut, come signs of approaching winter. Any time after the middle of October snow may fall on the surrounding mountains, though still the valley remains free from it, and even bright and sunny; but the nights get cooler, and with November hoar frost may begin; or else through November and December a haze covers the low country, which will keep off the night-cold, but at the same time prevent the sun's rays from brightening the land. The snow by repeated falls, each perhaps of no great thickness, gets lower on the mountains, and about Christmas time one may expect a general fall of snow over the whole country. With this winter has arrived, and there follows a time, usually about two months, during which snow hides the ground. The temperature, however, is not severe; the season, indeed, would be better if it were more severe, for the snow that falls is but just at the freezing point; it continually melts with the warmth of the ground, while fresh falls replace it from above; thus a thickness of from a few inches to a foot remains for the two months. The cold dampness of this time prevents the Kashmir winter from being a pleasant season. The fog from which the snow forms hangs over all the valley; only sometimes it may clear away, and a brisker keener air is the result. But even when the fog so covers the vale the higher parts are commonly free. In rising, for instance, to the Banihāl Pass, one will get above the fog and look down on it as it covers in the hollow; or in going up the lateral valley called the Sind Valley, in a march or two one will get clear of the fog that frequents the vale, and reach to where there is deep snow under foot and bright blue sky overhead; here, at the edge of the fog, as it may drift sometimes higher up than at others, I have seen an exceedingly heavy rime formed on every tree.

In coming down from Ladākh one year I marched through Kashmir and over the Banihāl Pass in January. Snow covered the vale, and whitened everything on the plain except the trees round the villages; at Sirīnagar its depth was six inches, at Islāmābād it was something more, and at Shāhābād there was a foot and a half of snow on the ground. On the Banihāl ridge it was so

thick one could not measure it. The Pass could not be crossed by horses, and for men it was very laborious. What struck me on coming down the other side as a thing worth noting was that the snow ended off in a sharp contour-line in the Banihāl Valley at a level of 6500 feet, which is 1300 feet above the level where snow was lying in Kashmir itself.

Towards the end of February, in general, the snow disappears from the vale, and spring comes on with a burst.

THE COUNTRY PEOPLE OF KASHMIR.

The Kashmīrī people are doubtless physically the finest of all the races that inhabit the territories we are dealing with, and I have not much hesitation in saying that in size and in feature they are the finest race on the whole continent of India. Their physique, their character, and their language are so marked as to produce a nationality different from all around, as distinct from their neighbours as their country is geographically separated.

The face of the Kashmīrī, as Sir George Campbell has observed with regard especially to one class of them,* is of the pure High-Aryan type; he was writing of the Kashmīrī Brahmans. It is also true of the cultivating class, the peasantry, who have kept their breed unmixed. They have a wide straight-up and high forehead and a fine-shaped head, a well-cut square brow, and eyes of a not very dark brown. With middle-aged and older people the nose acquires a decided hook of handsome outline; the mouth is often prettily curved with the young people, but it is apt to get straight and thin-lipped as they grow up. In figure they are, I should say, of middle height by our English standard, and not apt to run very much above it; they are a robust race, broad-shouldered and large-framed, and of great muscular power; some instances of what they could do as porters were given in the last chapter. The complexion is somewhat lighter than that of the Dogrās. Their clothing is simple; that of the poor people is entirely woollen. They wear short pyjamas, and a long, loose, large-sleeved gown, and a skull cap. Those who have active work,

* See Journal of the Asiatic Society of Bengal for 1866.

like the shikārīs or professional sportsmen, hitch the gown up and fasten it round the waist with a kamarband. Anyone who may be bound for a long march will put on leggings of a peculiar sort, a bandage about six inches wide and four yards long, wound round from the ankle up to just below the knee, and then fastened by an equally long string, attached to the upper end, which is lightly wound many times round the calf of the leg. This, which is called "patāwa," is a much-cherished piece of dress, and without doubt is a very good thing for mountain work; in the first place, it may be used to convert the pyjama into a kind of knickerbocker, then it is a protection for the leg in going through grass or brushwood, as well as against wet and cold. But the Kashmīrīs allow it other advantages; they say it strengthens or supports the leg, and so keeps off fatigue. For their feet they have either the common shoe used in India, or else grass shoes made of rice-straw; the straw is first twisted into a rope, and then interwoven to make a sole, which is fastened on sandal-wise.

In character the Kashmīrīs have many failings and faults, but they also have qualities which make one to be interested in and to like them. They are false-tongued, ready with a lie, and given to various forms of deceit. This character is more pronounced with them than with most of the races of India. They are noisy and quarrelsome, ready to wrangle, but not to fight; on the least exercise or threat of force they cry like children. They have, indeed, a wide reputation for being faint-hearted and cowardly; still, I must admit that I have sometimes met with Kashmīrīs who as against physical dangers bore themselves well. In intellect they are superior to their neighbours; they are certainly keener than Panjābīs, and in perception, and clearness of mind and ingenuity, far outvie their masters, the Dogrās. In disposition they are talkative, cheerful, and humorous.

In another chapter something will be said on their language; here it may in passing be told that from Panjābī and from Dogrī it is so different as to be quite incomprehensible to those nations; also, it is difficult to learn. The officials of the Maharaja's government, who have much to do with Kashmir, seldom master its language;

if they do so at all, with rare exceptions, it is only so far as to understand, and not to speak it. The Kashmīrīs, on the other hand, are good linguists; nearly all the men and a good proportion of the women know either Panjābī or Hindostānī, or, more likely, speak a mixture of both. The Hindostānī language, indeed, will well carry one through Kashmir, though Panjābī is more spoken by the older men, who learnt it when the Sikhs were masters; now Dogrī has to some extent come in, and, from the yearly influx of Englishmen and their followers, Hindostānī; but, as before said, a mixture of the dialects is more usual. The Kashmīrī language is rather harsh in sound, but it seems, to one who listens to a conversation without understanding it, to be expressive, and able to be made emphatic; those who speak it seem never at a loss to express every shade of meaning wanted.

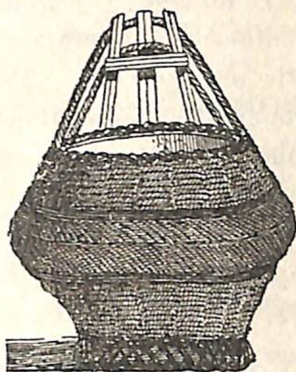
These country people have been spoken of as one of those classes in whom purity of race is apparent. One part of the valley is, I think, an exception in this respect. In the pargana of Machipūra, at the north-west end, there have settled colonies of people from west of Peshāwar, and these have, I believe, intermarried with Kashmīrīs. The class produced are now called Machipūria; they are divided into Machipūrias proper and Khaibarīs; the former sprang from an earlier colonization; the latter date from the time of the acquirement of Kashmir by the Durānī dynasty.

The country people are but poorly off; I think, indeed, that they get a fair meal, but they can afford little beyond their simple daily food, and are unable to provide against a rainy day; so when a bad year comes, as, though not often, does sometimes happen, they are put to great straits, and will perhaps leave the country in numbers; for the isolation of the place is such that it is exceedingly difficult for any great importation of corn to be made to redress the failure of a harvest. Thus famines have, in former times, been the occasion of migrations of Kashmīrī, the origin of the settlements of them we met with in various parts of the Outer Hills, and of those in the Panjāb itself.

The Kashmir villages, though untidy in details, are very picturesque. The cottages are two-storied; in some parts they

have mud walls, with a low sloping gable-roof of thatch or of rough shingle; in others, where wood is more plentiful, they are entirely of timber, made like a log-hut. They are sure to have some rooms warm and cosy, to live in in winter time; and a balcony sheltered by the overhanging eaves makes a good sitting-place in summer. The lower story of the cottages is used in winter for stabling the cattle; their animal heat sensibly warms the house, and partly counteracts the coldness of the season.

But the Kashmīrīs have a plan that renders them very independent even of household fires for a protection against cold. Of all classes, and of all ages, they carry what they call a *kāngrī*. This is a small earthen pot, about six inches across, enclosed in basket-work; it contains live charcoal. They hold this beneath their great gowns, against their bodies, and the heat from it, especially when they are seated on the floor, diffuses itself beneath their clothing, and makes up for the scantiness and looseness of it; for in winter they neither change nor add to their summer clothing. The kāngrī is accurately represented in the adjoining cut.



A KĀNGRĪ.

The cottages are not clumped and crowded, as in the villages of the Panjāb and of Dugar, but are commonly detached. By the village, grow, unenclosed, numerous fruit-trees—apple, cherry, mulberry, and walnut—which form a wood or grove around and hide from view the dwellings. Looking from a commanding height we see the vale all studded with such village groves. In the early summer, when the fields are flooded for rice cultivation, there is the appearance of a chain of lakes and straits, the parts occupied by the villages themselves being the only dry land. In all such prospects, when the eye has scanned the inhabited plain, it reaches beyond to the dark forests and shining snow-fields of the stately mountains.

THE PEOPLE OF THE CITY.

In Sirīnagar there is more variety in the inhabitants than in the country around; the people here are more divided up into castes, some of which are based on hereditary transmission of occupations, of which there is necessarily greater variety than in the villages.

First, standing out marked and separate from the rest, are the Pandits. These are the Hindū remainder of the nation, the great majority of which were converted to Islām. Sir George Campbell supposes that previously the mass of the population of Kashmir was Brahman. An examination of the subdivisional castes of both Pandits and Muhammadans, if it were made, might enable us to settle this question. Whatever may be the case as to that, we certainly see that at this day the only Kashmīrī Hindūs are Brahmans. These, whatever their occupation—whether that of a writer, or, may be, of a tailor or clothseller—always bear the title "Pandit," which, in other parts of India, is confined to those Brahmans who are learned in their theology.

The Kashmīrī Pandits have that same fine cast of features which is observed in the cultivating class. The photograph given, after one of Mr. Frith's, is a good representation of two clothsellers who are Pandits, or Brahmans. When allowance has been made for an unbecoming dress, and for the disfigurement caused by the caste-mark on the forehead, I think it will be allowed that they are of a fine stock. Of older men, the features become more marked in form and stronger in expression, and the face is often thoroughly handsome. In complexion the Pandits are lighter than the peasantry; their colour is more that of the almond. These Brahmans are less used to laborious work than the Muhammadan Kashmīrīs. Their chief occupation is writing; great numbers of them get their living by their pen, as Persian writers (for in the writing of that language they are nearly all adepts), chiefly in the Government service. Trade, also, they follow, as we see; but they are not cultivators, nor do they adopt any other calling that requires much muscular exertion. From this it



KASHMĪRĪ BRAHMANS

happens that they are not spread generally over the country; they cluster in the towns. Sirīnagar, especially, has a considerable number of them; they have been estimated at a tenth of the whole of its inhabitants.

The remainder of the citizens are Muhammadans. They have caste subdivisions, but I cannot give details of them. The remarks I shall make will refer to occupations only. It must be understood that castes among Muhammadans, though often traceable to the same origin as those of Hindūs, are not such strict divisions. In the first place, there is not any restriction connected with them as to eating in company. There is a general custom of marrying in the same caste, but this is often broken through, and outside marriages are made, which cause the divisions to grow less and less distinct. A large proportion of the town inhabitants are shawl-weavers, whose handicraft has made Kashmir to be familiarly known over the whole both of India and Europe. These men spend long days in the low, crowded, factories, where the air is very impure, especially in winter; they keep the place close for warmth, and in the absence of ventilation the atmosphere becomes very highly vitiated. This, and the constancy of the sedentary employment, has acted on the physique of the shawl-weavers; they are a class whose sallow complexions and weak frames contrast strongly with the robustness of most other Kashmiris. The other ornamental arts of Sirīnagar are silver-work and papier-maché painting. The specimens of their work shown in the various Exhibitions have of late years made many familiar with it. It displays the same taste, the same artistic feeling—whether shown in simple beauty of form, or in harmonious brilliancy of colour—which has made the Kashmir shawl, when of the best, a thing inimitable by other manufacturers. Of other trades there are many—as the dyers, washers, and brokers—connected with the shawl trade; and there is every variety of handicraft usually found in an Indian city; but few of these, either from superiority of skill, or from the importance of numbers, require special mention.

One other class, which is a numerous and a conspicuous one,

shall be spoken of. This is the class of Hānjīs, or boatmen. It has been said that the river is the great highway of the country; it is navigable for two days' journey above and two days' journey below the city, and it forms the great artery of communication in the city itself. The class of boatmen, therefore, is likely to be important. They live, in some cases for months together, in some cases entirely, in their boats. A portion of the after-part of the boat is separated and covered in with matting, so as to make a dwelling-place not uncomfortable; even the winter can be weathered under such shelter, with the aid of the kāngrī. By the help of plastered mud a fireplace for cooking is arranged, and the whole family—often three generations together—thus pass the greater part of their lives on board.

The Hānjīs are the class with whom Englishmen who visit Kashmir come most into contact, and from whom they are apt to form their opinion of the whole nation. They have, indeed, some of the best and some of the worst qualities of the Kashmīrīs intensified. They are men of active imagination, which is shown in their ready tales and in the lying legends they are always prompt to invent to amuse one. They are excessively greedy, never being satisfied as long as they think there is the least chance of getting more. The cowardice which is proverbially a characteristic of the Kashmīrīs, is shown by the Hānjīs whenever they are overtaken on one of the lakes by a storm of wind. They have much of good spirits and of humour, and in energy and versatility they are behind none of their nation. The photograph of the group of Hānjīs (this also taken from one of Mr. Frith's) shows that in face and figure they are a race deserving admiration. Their body is well developed by their labour of towing and of paddling; especially the muscles of their back become greatly strengthened by the latter. These boatmen use a single heart-shaped paddle, in the working of which they are exceedingly skilful. One of them, sitting in the stern of a boat, will both propel and guide by paddling on one side only; for a drawing of the paddle a little towards one, or a turn of the wrist outwards, will enable one to steer in the stroke itself. The women help in the paddling,

but only for slow work. In towing, men, women, and children all take their turn.

There are several different kinds of boats in Kashmir, whose names it may be useful to give. *Bangla* is a large state vessel, with, as it were, a house built amidships; this is used only by the rulers. *Parinda* is the name, metaphorically given, of a light, fast, boat, with a small platform forward, and an awning over part of it; this also is for persons of consequence. These two may carry a score or two of paddlers. *Bahts* is the large-sized barge used for carrying grain, a heavy, cumbersome, vessel; it has a kind of thatched house at the stern for a living house. The *Dunga* is the ordinary boat for carrying miscellaneous merchandise, and for carrying passengers to a distance; it is this which the English visitors take to with their establishment for the excursions up and down the river. In such a boat one can pass both days and nights very comfortably. These dungas are the home of the greater number of the Hānjīs. A *shikārī* is the sort of boat that is in daily use with the English visitors; a light boat, manned, as it commonly is, by six men, it goes at a fast pace, and, if well fitted with cushions, makes a comfortable conveyance. A *bandūqī shikārī* is the smallest boat of all; a shooting punt, used in going after wild fowl on the lakes.

Last in our description of classes shall come the caste called *Bātal*. This division is one that may likely have an ethnological importance. The Bātal is one of those tribes whose members are outcasts from the community. Like the Dūms of the Outer Hills, the Bātals have to do the dirtiest work; it is part of their trade to remove and skin carcases and to cure leather. I have heard that there are two classes of Bātals — so apt are communities in India to divide and subdivide, to perpetuate differences, and to separate rather than amalgamate. The higher Bātals follow the Muhammadan rules as to eating, and are allowed into some fellowship with the other Muhammadans. The lower Bātals eat carrion, and would not bear the name of Musalmān in the lips of others though they might call themselves so. By the analogy of other parts, these Bātals are very likely to be the

remnants of inhabitants earlier than the Aryans. From among them are provided the musicians and the dancers; the dancing-girls whom one sees at the darbārs and festivals which the Maharaja holds at Sirīnagar are of them.

I have hitherto spoken of the men of Kashmir and not of the women. In my accounts of other races, also, it will have been observed that I have said little about the women. The reason is obvious. One sees so little of the women, except of the lowest classes; one so seldom meets them face to face, that it is difficult to generalise about their characteristics. In Kashmir there are one or two classes of whom one sees more than one would of corresponding ranks in other parts of India; still I do not feel able to give more than my general impressions of their appearance. Among the Kashmīrī the general run of women are decidedly good-looking. A well-shaped face, good brow, and straight nose, with black hair coming rather low on the forehead; these are features not uncommonly met with. Sometimes one sees a thoroughly handsome face. The women are tall and well grown; as to grace of figure, the looseness of their dress prevents one from speaking; but I do not think that they have the delicacy and elegance of form that many women in India have, and the well-turned arm and small hand there so usual is not common in Kashmir. The two classes one sees most of are the Panditānīs, that is the women of the Pandit or Brahman caste, and the Hānjnīs, or women of the Hānjī caste. At certain times of the day a trip through the city by the river will show you specimens of both. The Panditānīs have a delicate look; they have a light, rather sallow, complexion. The Hānjnīs are used to exercise and work; they show in their faces a healthy brown and red, and I think more often have a pleasing expression than the others. The Hānjīs' little girls of five or six are as pretty as any I have seen anywhere.

The girls, until they marry, wear their hair hanging down behind in numerous plaits, joined together and continued by cords and tassels. The women wear, like the men, a long loose gown, hanging in one fall from the shoulders to the ankles. For head-

dress they have a low red cap, with a white cloth hanging from it, mantilla-wise, down the back. The Panditānīs wear a white kamarband, or waist-belt, confining the gown. The dancing-girls of the Bātal caste, from whom some Europeans are apt to form their idea of the women of Kashmir, and who, being least unwilling to undergo photography, are those whose pictures one can see in London, are by no means fair examples of the race; neither in figure nor in face are they so fine as the women of the other castes —of the Kashmīrī race proper.

THE CITY OF SIRĪNAGAR.

Sirīnagar is the ancient and the present name of the city. On account of its being a Hindū name it was disused during the time the Muhammadans were rulers, and for some hundreds of years the city was called by the same name as the country, that is, "Kashmir." Accordingly, we find that Bernier in Aurangzeb's time, and Forster who travelled in this country in 1783, use the name Kashmir, and not Sirīnagar. But when the Sikhs conquered Kashmir they restored the old Hindū name, and "Sirīnagar" the town has since been generally called, though in the mouths of some Muhammadans it still is "Kashmir."

The city is situated about the centre of the valley as regards its length, but quite at the north-east side of it, near where the river Jhelam in its windings through the alluvial flat touches some of the projecting spurs of the mountains. Where the river makes a great bend, changing its course from north to south-west, there, along both banks for a length of three miles, the town is built, extending not more than half a mile on each side of the river. The stream is about like that of the Thames at Kingston in width and rate of flow. It is the chief artery of traffic; it is of much more importance as a thoroughfare than any of the streets; indeed, there are but one or two streets, and those but short ones, that have anything like a continuous traffic, while the river is always alive with boats.

The river aspect of the city is extremely picturesque. There is nothing like a quay or embankment, and there is no line of regular buildings, but each house is built independently. In

height uneven, of form varied, and in material changing as to the proportion of stone and wood, the houses nearly all agree in having a low sloping roof, with eaves extending, and much window-space in the front, guarded by movable wooden lattices of elaborate patterns. The base of each house is a solid stone wall, sometimes of rough masonry, sometimes better built of cut stone obtained from some old Hindū temple. This firm wall is raised to a level above the rise of the highest floods; it has in many cases supported several generations of superstructures. Above it is the wood and brick building of two, three, or at most four stories, often projecting several feet over the river, supported by the ends of the floor-beams, propped, may be, from beneath. This upper structure is sometimes of brick columns, on which all above rests, with looser brickwork filled in between; but sometimes the frame-work is of wood, which confines the brickwork of the walls. These mixed modes of construction are said to be better as against earth-quakes (which in this country occur with severity) than more solid masonry, which would crack.

The view of these buildings—uneven, irregular, but for that very reason giving in the sunlight varied lights and depths of shadow; of the line of them broken with numerous stone *ghāts*, or stairs, thronged with people, that lead from the river up to the streets and lanes of the city; of the mountain-ridges showing above, in form varying as one follows the turns of the river; of the stream flowing steadily below, with boats of all kinds coming and going on it—is one of remarkable interest and beauty. From a height of tower or hill, that will command a bird's-eye view, the sight is still more curious, because of the great expanse of earth-covered roofs, which at some time of the year are covered with a growth of long grass, that makes the city look as green as the country. The frontispiece, which is a woodcut taken from one of Mr. Frith's photographs, admirably represents these characters.

The public buildings are mosques, Hindū temples lately erected, and the Palace. This last is within the walls of the Sher Garhī, or fort, which is large enough to include, besides, a bazaar of some importance, the Government offices, and the

houses of the courtiers. To the river it presents a loop-holed wall, with bastions, rising some 25 feet above the general level of the water, surmounted by these roomy but lightly-built houses. The Palace, at the lower corner, is an irregular building, of style partly Kashmīrī partly Panjābī, while a new lofty edifice with a large projecting bow has traces of European design, though it was not in reality planned by an Englishman. Close by is a golden-domed temple, which is frequented for morning and evening service by the Court.

Of one of the mosques a drawing is given on the title-page; it is the one called by the name of Shāh Hamadān; it is a good specimen of the indigenous architecture, which has indeed become adapted to mosques and shrines in a way both to suit the object and to give a pleasing effect.

The river is spanned within the city by seven bridges, whose structure of piers—built of alternately-crossing layers of poles (with intervals filled in with stones), widening above to shorten the span of the beam—will be understood from the view of one shown in the picture of the city. A few canals traverse the interior of the town. One of them is wide, and is overlooked by some of the best of the houses. One is narrow, passing through some of the poorest parts; low dwellings crowd on it that, albeit they are well peopled, seem to be on the point of falling; these are irregular, ruinous, places that it would have delighted Prout to draw. A third canal leads from the upper part of the city to the gate of the lake, and shows along its winding course groves of plane-trees on the banks that make a beautiful combination with the smooth waters at their feet and the mountains that rise behind them.

Environs of Sirīnagar.*

In the South Kensington Museum, on the staircase, is a panoramic view, painted by Mr. Carpenter, of the vale and city of Kashmir. This panorama is well worth studying. It does not, indeed, in its colouring do justice to the subject; Kashmir has yet

* Many more details of the places round Sirīnagar than I have attempted to give will be found in a book before mentioned, 'Ince's Kashmir Handbook.'

to be painted; but it is admirably truthful as to outline, and an examination of it will make clear the position in the valley of the city and the character of its surroundings.

Taken as it is from a spot on the Takht hill, overlooking Sirīnagar — a conspicuous rocky temple-crowned hill, nearly isolated from the last spur of the mountains—the view shows in the distance a long line of the steep snowy peaks of the Panjāl; in front of them, towards the plain, lie the forest slopes and the barer ground of the high karewas; then the low vale extends its length, through which, in deep-winding curves, flows the Jhelam River. The last reach of the river, before it comes to the city, is edged by the houses, nearly hidden in the orchards, where lodge the English visitors. Where the city lies the river is hidden from our view by the buildings amongst which it finds its way; a great space is closely covered by the house-roofs; among them rise the spires of the mosques, and beyond them the fort-capped hill called Harī Parbat. On the right is marshy ground intersected by clearer water-channels; this melts or changes into the lake called the *Dal*, around which are some of the most favourite spots of all in the Vale.

The Dal is a lake measuring five miles long from north to south, and two miles from west to east; it is in part shallow, and inclining to be marshy; in other parts it is deeper, and everywhere it is of the clearest water. On three sides a mountainous amphitheatre backs it, whose summit is from 3000 to 4000 feet above the water. On the ground at the foot of these mountains, at the edge of the lake, are numerous villages surrounded by orchards, and the several renowned gardens constructed by the Delhi Emperors. Westwards, towards the open flat, are, first, the gardens that float—gardens made of earth and vegetable matter accumulated on water-plants; then the half-reclaimed marsh, alternate strips of shallow water and made ground, and then the city. The three most delightful places on the lake are the Nishāt, Nasīm, and Shālamār Gardens. These were all made, the buildings constructed and the trees planted, by the Delhi Emperors; and if the buildings have gone to decay and lost

much of their original beauty, we may congratulate ourselves on being able to enjoy the shade of the magnificent chīnār, or plane-trees, which, while the Emperors' rule still lasted in Kashmir, had hardly reached their prime.

Nishāt Garden, or *Nishāt Bāgh*,* is situated on the sloping ground in front of the mountains. It is an oblong walled enclosure, of some 600 yards in length, reaching from the lake edge to the foot of the steep hill-side. It is terraced to the fall of the ground, and divided into five widths; the two outer are now in grass or orchard; within these are strips of ground in beds, an outer garden; in the centre the terraces have revetments, and a well-built masonry canal, with flower-beds along each side, occupies the whole length; the fall at each terrace-face is made over stone slabs carved in scallops to scatter the water, while each level stretch of the canal has a line of fountains. A bungalow (bangla), or pavilion, built over the running water, completes the line at each end; the beauty of the vista is much enhanced by the great plane-trees on each side; over these the eye looking downwards commands a lovely view of the lake, while upwards the great cliffs of the mountains shut closer the prospect.

Shālamār Garden† is a couple of miles to the north. It is on a plan somewhat similar to that of Nishāt, but the terraces are low on account of the ground being of a gentler slope. For the same reason the prospects are not so commanding. The chief beauty in this garden is the uppermost pavilion, which is supported on handsome columns of black and grey fossiliferous marble, and is surrounded by a tank filled with fountains, while plane-trees overhang it. The canal leads down in cascades and level runs alternately, and beyond the gates it continues through the marsh far into the lake.

* "Garden of Gladness."

† Curious mistakes have been made as to the derivation of this name—mistakes which are generally due to the traveller following the imperfect knowledge of his Persian-writing munshī. Vigne speaks of the name as coming from "Shah-il-imarat." In another book I have seen "Shahi-imarat," "royal building." The true derivation is obvious to anyone acquainted with Hindī words. Shāla means "house," or "abode"; Mār is the name of the Hindū goddess of Love. The Kashmīrīs often contract Shālamār Bāgh to Shālabāgh.

Nasīm Bāgh, or the Garden of Breezes, is a place that never saw its prime. It was constructed by one of the Mughal or Delhi Emperors, with a great revetment wall, terraces, and masonry stairs. On the plateau, 30 or 40 feet above the lake, a succession of cross avenues of plane-trees was planted. The structure, which made one grandeur of the place, fell into decay before the trees reached to the height of their beauty. Now the masonry is in ruins and half hidden. The splendid avenues of chīnār-trees throw a shade over quiet grassy walks. From among the foliage the view over the ake is exquisite; the water has a glassy surface, reflecting very perfectly the circling wall of mountains; but these have often, especially in the morning sun, their details softened, as well as their colours harmonized, by the brightening of the delicate haze that intervenes.

SUMMER RETREATS.

Every corner of the vale, every nook where the lower land runs up into the hills, and every part of the slopes where the ground that belongs to the valley graduates into that of the mountains, will show some beauties for the traveller to delight in. Of such places as these some are frequently resorted to by Englishmen; others are left unnoticed, except when some sports-man in his search for game visits them. As examples merely I will name a few of those spots to which the traveller when tired of the city will like to find his way.

I have before said that, delightful as the Kashmir summer is in a general way, there is some part of it when the low neighbour-hood of Sirīnagar, surrounded at no great distance by lake and marsh, becomes somewhat unhealthy. At this time—from the middle of July, perhaps, to the middle of September—the English visitors seek a higher level. Those of them who are not scattered farther about the country are apt to throng to *Gulmarg*.

This place is about 30 miles by land from Sirīnagar; this distance one would, with a camp, take two days to traverse. A more convenient route is to drop down by boat to Patan, which course can be navigated during the night, and thence make one



KASHMĪRĪ BOATMEN

long march to Gulmarg. The direction is on the whole west; the boat crosses the river-alluvium flat, here much covered with water; then from the edge of it one has to rise up the sloping karewa. First the ground is intersected with watercourses, and villages abound; then, as it gradually gets steeper, one passes through a low jungle; then, rising to yet steeper slopes, which can hardly be classed with the karewas, we find ourselves in a forest of pine, threading which we at last reach the valley called Gulmarg. This is a little grassy and flowery valley; it well bears out its name, the meaning of which is "flower plain"; it extends two or three miles in one direction, while in width it varies to a mile as its maximum; it is enclosed by low hills, spurs from the mountains, crowned by thick forests of lofty pine-trees, that shut out all further view and make the spot a most secluded one. The level of it must be about 8000 feet; this elevation is enough to give an atmosphere that in the hottest time of the year is never oppressive. In this respect the climate is all one wishes for; but in some years the proximity of the place to the Panjāl mountains allows the rain-clouds to break over it and showers to fall more plentifully than for comfort one would choose. Gulmarg is not permanently inhabited, but is frequented in summer by Kashmīrī Gujars.

The ridge that forms the boundary on the south-east is low, and may soon be surmounted. If one can find a gap in the forest to allow of the view, one will see the flat plain stretched below, with its villages looking but bush-patches in the distance, and beyond ridge after ridge of mountains, such as I have tried to show in the sketch given in the next chapter (opposite p. 196) of the great mountain, called Nangā Parbat, that shows up behind them all. To the south and south-west the mountains reach to very considerable heights; from some points one can obtain a view of them which shows great expanses of mountain slope, thickly covered with pine and spruce, and above these grassy hills and rocky peaks.

Lolāb is another place that at some seasons is delightful. I do not surely know its altitude; probably it is near 6000 feet. *It is*

situated on the farther side of the ridge that edges the Walar Lake on the north-west. Crossing this, for which we have to rise perhaps 2000 feet, and descending, we find ourselves in a plain about 6 miles long and 3 miles wide, encircled by hills which are for the most part covered with pine and deodar forest. The green vale, studded with villages, which are shaded by walnut and other fruit-bearing trees, is pretty and pleasant-looking; and from the way in which it is surrounded by the dark-wooded hills it gives one the impression of calm and quiet; but on passing along one sees much of the village land lying waste and neglected; this and the dilapidated houses tell of neglect and desertion following the oppression of a harsh system of land-taxation.

Tsirār is a place some 17 miles south from Sirīnagar, a town placed at the elevation of 6400 feet, on one of the higher karewas, a narrow karewa, from edge to edge of which the town extends. All around it are more narrow karewa ridges, the tops of them bare of trees, undulating slightly. They are divided by deep valleys, whose sides are covered with a low growth of *Pinus excelsa.* This kind of country continues up for many miles towards the mountains, the ridges gradually getting higher and more forest-covered. Behind these more gentle slopes rise the steeper mountains; these also, in their lower part, are dark with pine forest; above is a barer tract, which at the time I saw it, when winter was beginning, was covered with snow, and so to the peaks of the great ridge.

To this town of Tsirār, during the latter months of our year, the Kashmīrī resort in great numbers to do honour to the saint, whom they call Shāh Nūr-ud-dīn, who here is buried. The people come from the city, spend a day or two, and then return. Thursday and Friday are the fullest days; a fair is then held, when the bazaar and the temporary stalls are crowded. To the building which contains the tomb of Nūr-ud-dīn, and of some disciples and successors of his, access was most difficult, on account of the numbers. The guardians of the tomb, themselves faqīrs, greedily took from all. The people went though and paid each his mite, without seeming to bestow a thought on the religious character of

the place. They threw much more heart into the fair itself. I had never seen Kashmīrīs so self-forgetful and given for the time to enjoyment. Everyone bought something, the value of a penny or two, as a fairing—a kāngrī, perhaps, whose price here was something under twopence, or a carved wooden spoon, or coloured-glass armlets; something or other to take to those who had stayed at home. The Friday, according to their reckoning, had begun on our Thursday at sunset; during that night the religious object of the journey had been attended to; the next morning then they were ready for the return journey. Throughout the day they trooped back in thousands, people of all classes and ages crowding the path.

At the south-east end of the valley, where the different streams that form the Jhelam come down in various branch valleys from the mountains, are many places where the eye finds relief from contemplating the beauty of distant prospects in nearer views of calmer effect. *Naubug* is one of these spots. Here a small valley is bounded by slopes of low hills that are long spurs from the high ridge behind, hills that rise only to 1000 and 1500 feet, well covered with grass and wood, the slopes not very steep, the hills rounded; these spurs branching make an ever-changing scene of nook, knoll, and dell. In the lower parts the valley-bottom is cultivated in rice-fields, which alternate with orchard-shaded village-tracts.

It is one of the charms of being in Kashmir that the independence of the kind of travelling there followed by all enables one with a map in hand, or by information easily got, to hunt out places that show varying scenery, and give numerous subjects of interest. Those places spoken of, as before said, are but instances; we will go no farther in attempting to describe more, only in the chapter on the march from Kashmir to Leh will be described the Sind Valley, which is one of the finest of all.

CHAPTER IX.

THE MOUNTAINS ROUND KASHMIR.

PRELIMINARY OBSERVATIONS — MAIN CHAIN, FROM NANGĀ PARBAT TO NUN KUN — THE MOUNTAINS OF THE NORTHERN BOUNDARY — THE MOUNTAINS ON THE EAST — THE PANJĀL RANGE — THE JHELAM VALLEY BELOW BĀRAMŪLA.

PRELIMINARY OBSERVATIONS.

IN the last chapter we went in some detail into the subject of the form of the ground in the lower portions of Kashmir, which constitute the valley; as to the surrounding mountains, there was little more told than the height of them at different parts. But these deserve a fuller account. True it is that it is difficult to describe in words the shape or the course of a complicated range of mountains; still I will attempt in some measure to do so, relying much on the map (which for this chapter especially should be in the reader's hand) to make up the deficiencies of the writing.

Before commencing, I must guard against an unintended meaning being attached, a wrong force allowed, to the geographical terms which, in common with others who describe mountain countries, I shall have to apply. I think, for instance, that the words "ridge," "range," and "chain," often convey a wrong impression. Sometimes, indeed, it may happen, as in the Outer Hills, or with respect to any one simple branch, that the idea first conveyed to the mind by, say, the word "ridge," will be the true one —a simple, definite, though, may be, irregular, line of elevated ground. But when one comes to speak of the great masses of ground we have now reached, with their complication of form, though we are necessitated to use the same words, we find them inadequate to express the facts. Such ranges as we have now to treat of are wide masses of raised ground cut into by deep valleys (which seldom widen to broad hollows) and by innumerable

branch ravines; the spaces between these ravines and between their trunk valleys making the spurs and the branch ridges. As to the summits, the spurs and branch ridges are not as a rule left wide, to form a table-land, but are quite narrow-topped; they vary (at different levels perhaps, or according to the composition of the mountains) in being sometimes rounded, sometimes sharp-edged; and there are the further differences of the summits being nearly level, or of a regular slope, or of being rugged or serrated, or else having, rising from the ridge, elevations that may be called peaks. Such are the masses denoted by the appellation "range" or "chain."

Again, if in a combination of mountain-ranges one particular line is called the "main range," or the "main chain," we must understand together what is meant by the expression. It may perhaps be applied to the *chief line of watershed.* Every range and ridge must be a watershed of some degree; it is the line of the most important watershed that is often spoken of as the main range. In the case before us, the line between the waters of the Jhelam and those of the Indus has that rank, and in the present chapter it will bear the above title. Now, it is not likely that for the whole distance such a watershed line will be occupied by the highest mountains. There will be gaps between them, that make the Passes from one drainage-basin to another—gaps, perhaps, lower than the depressions in the branch ridges; and, again, it not uncommonly happens that on the branches that do *not* constitute any important watershed there are peaks of greater height than any on what was called the "main range."

Whether a watershed, if of comparatively low elevation, is to be counted as the main range, and the higher peaks which, though separated, are perhaps arranged in another, maybe parallel, line, are to be reckoned as spurs from it; or whether we are to call the line of highest ground the range, and to say that it is cut through by valleys that originate at the back of it; this question seems to me nothing more than one of phraseology, to be nothing about which people who know the form of the ground need seriously differ, though one may prefer one fashion of describing the facts, and another the other. The danger, for truth, is when words are

used to connect facts in such a way as to make the hearer infer a closer relation between them than there really is. Such phrases as "the true continuation of this chain," or "this range disappears beneath the plains and reappears farther on," have a show of some deep meaning; but if one were to try and get them defined, they would, probably, turn out to mean nothing, or else to mean what was not borne out by the facts. The truth is that, beyond the superficial circumstances of outward form, the questions of the relationship of different ground-masses must be treated of with regard to their origin, that is to say, they must be treated of *geologically;* and when physical geologists inquire into them they will give their results in quite other, I may say more definite, language than of the sort quoted above.

I do not myself propose to attempt any geological account of the mountains. I have not observed enough of their internal structure to give the result in any general view, or to make very important inferences. While keeping, then, to geographical methods and using geographical terms, I shall hope to make use of these in such a way as to prevent a wrong conception of my meaning from being received.

Let us now begin our survey of the mountains. Let us look first at the great chain on the north-east of Kashmir, and afterwards we shall see how branches from this come round and enclose the valley.

MAIN CHAIN, FROM NANGA PARBAT TO NUNKUN.

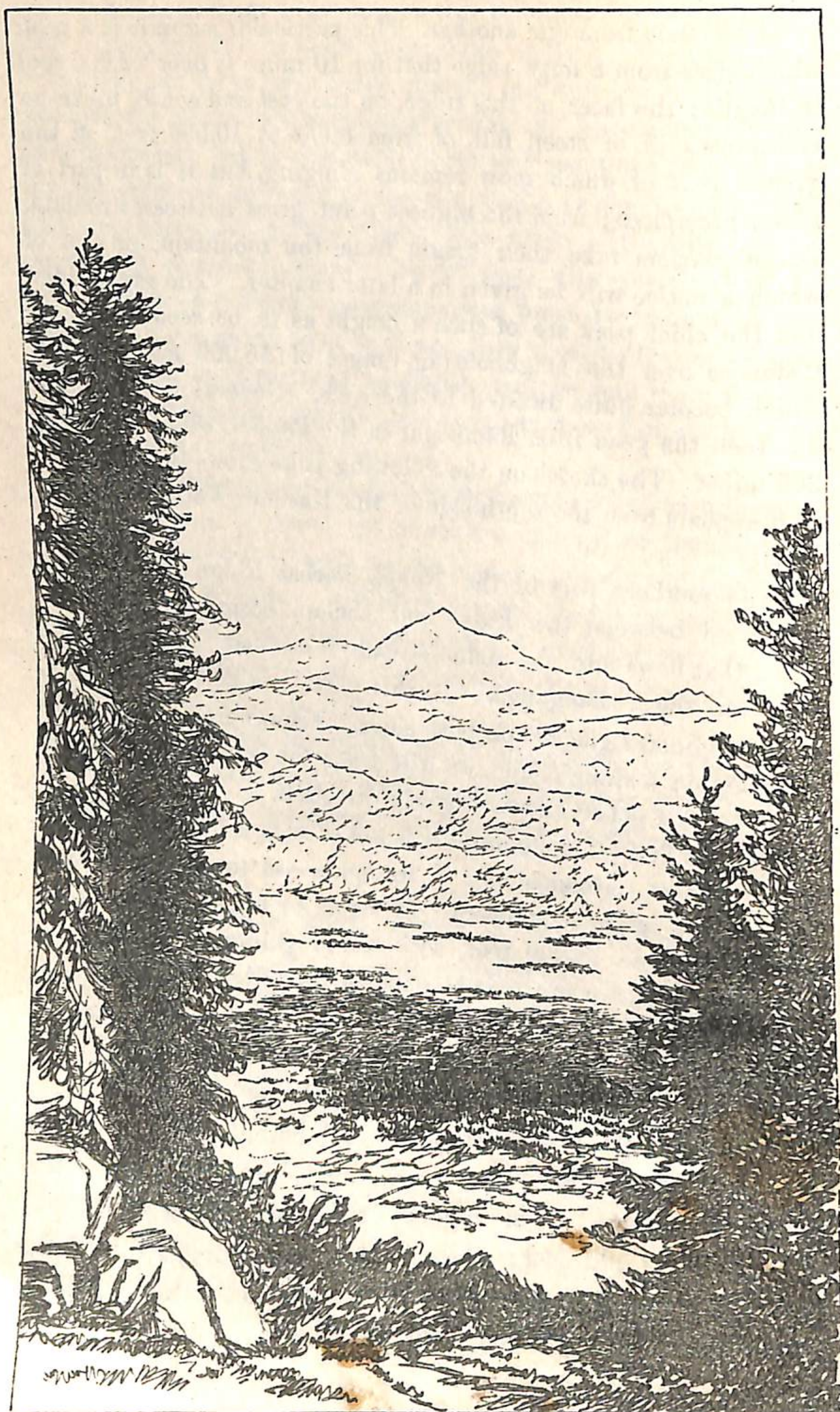
Commencing with the great mass of which a part is called Nangā Parbat or Diyāmir,* we there find ridges and spurs, many points of which are over 20,000 feet high; the highest point of the whole mass (the one which bears the name) is 26,629 feet above the sea; this is not quite on the watershed between the Indus and the Jhelam, but is part of a branch that divides the Astor and Chilās rivers, both of which flow into the Indus at no

* This mountain is called *Nangā Parbat* (which, in the Hindī dialects, means "Naked Mountain") by the people who see it from the sou h. The name *Diyāmir* is what it goes by among the Dārd races who live near

great distance from one another. This particular summit is a peak which rises from a lofty ridge that for 10 miles is over 22,000 feet in height; the faces of this ridge, on the east and south, make an enormous cliff, or steep fall, of from 6000 to 10,000 feet, on the greater part of which snow remains clinging, but it is in part of rocky precipices; from the highest point great buttresses radiate. Large glaciers take their origin from the mountain, of one of which a notice will be given in a later chapter. The great ridge and the chief peak are of such a height as to be seen from long distances over the neighbouring ranges of 16,000 feet altitude, which become quite dwarfed to the eyes. General Cunningham has seen the peak from Rāmnagar in the Panjāb, which is distant 205 miles. The sketch on the following page shows the mountain as it appears from the south side of the Kashmir Valley, 80 miles away.

The southern part of the Nangā Parbat Ridge becomes the watershed between the Indus and Jhelam basins, dividing the water that flows into the Astor stream from that which finds its way into the Kishangangā. At this part it is 20,000 feet high, and it originates glaciers on both sides. From here, for 120 miles reckoned on a straight line, we will trace the course of the chain, which takes a general south-easterly direction.

For the first 50 or 60 miles it is not of such a height—neither in the line of watershed nor in its spurs—as to bear perpetual snow or give origin to glaciers. It seems to be commonly of an altitude of some 14,000 feet, with a few points of 15,000, or a little more. There are several gaps in the ridge that are passable. Two much-traversed roads, which join the Kishangangā and Astor rivers, go over Passes of 13,200 and 13,500 feet, while farther east Passes lead from the former river-valley into the basin of the Drās River; these can all be traversed by laden horses. After the length of nearly 60 miles the mountains become rather higher; there are peaks of 17,000 and up to 17,400 feet; these collect enough snow to form small glaciers. But the ridge is broken, and a not difficult Pass occurs wh[illegible]tly connects the Tilel branch of the



Stanford's Geogr. Establ., London.

NANGĀ PARBAT, FROM BĀBĀMARĪSHĪ IN KASHMIR.

Kishangangā Valley with Drās. A few miles south of this gap occurs the branching of the mountain mass that goes to make the north boundary of Kashmīr; this we will return to, and now only note the spot from which that ridge separates. Again, a few miles farther on, still to the south-east, and we come to where there is a gap in the mountains, which is the lowest passage, between the Indus on the one side and the Chīnāb and Jhelam basins on the other, along the whole length of 300 miles from the eastern sources of the Chīnāb to the head of the Khāgān tributary of the Jhelam. This Pass is called Zojī Lā by the Tibetans, the Ladākhīs; by others it is commonly called the Drās Pass.

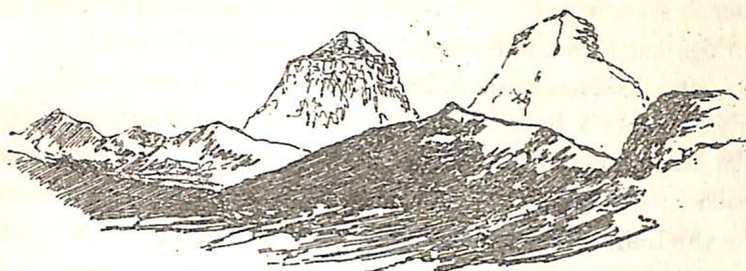
The height of this passage through the mountains is 11,300 feet. An important characteristic of it is that there is a great rise to this level from the Kashmir side, and but a very slight fall on the Ladākh side. Coming from Kashmir we rise steeply, in the last mile or two, a height of about 2000 feet to the level of the Pass; we then find ourselves in a narrow valley, the floor of which descends with so gradual an incline that in 20 miles we do not descend more than 1000 feet. The Pass itself—the high-level valley which is reached after the steep ascent—is a level grassy valley not much more than a quarter of a mile in width. The mountains bounding it are rugged and rocky; the peaks immediately seen are 2000 or 3000 feet above the valley, but the ridges, of which these are the ends, continuing back reach to 5000 and 6000 feet above it, or 16,000 and 17,000 feet above the sea. These mountains belong to the very central range and to spurs from it. By this Pass one rises into the high-level country of Ladākh, where the valley-bottoms are at levels from 10,000 feet upwards. Indeed, if we go anywhere in the Upper Indus basin south of the latitude-parallel of this Pass, we shall find no ground, even in the valleys, so low as 10,000 feet.

Continuing along the main chain, we find that the summits get higher and higher; peaks of 18,000 feet, and some, as we go on, that approach 20,000, occur, and the general level of summits is not much below them. Long spurs, too, or branch

ridges, that jut out, are very lofty. Ten miles east-south-east from the Pass a distinct ridge branches off in a direction somewhat west of south, which is the one that, curving round, forms the eastern and southern boundary of Kashmir, and connects on with the Panjāl Range; this, too, we shall revisit. Then in some miles more (26 or 27 miles direct from the last Pass) we come to an opening which, though not so low as the other, yet, considering the loftiness of the mountains it passes between, is a considerable depression. This is the Bhot Kol Pass; it leads from the head of the Wardwan Valley into the Surū district. It is a glacier pass, but one over which it is possible to take a horse.

From the Drās Pass hither the peaks have been of a height to form glaciers. There is a glacier in every hollow of the ridge. Many of the branch ridges also hold them in their recesses. These glaciers are usually not large; two or three miles long is common; and they do not generally extend very low; one, however, named the Mechuhoi Glacier, the lowest that I know of near here, has its foot at 10,850 feet above the sea; this is close on the valley of the Drās Pass. Looking from near the Bhot Kol Pass to the north-east, at one view a number of these small glaciers can be seen, embedded in the hollows of the mountains, whose narrow rock-ridges curve round and enclose them.

From the last-named Pass eastwards the range continues at a great height; points on it are nearly 20,000 feet high. Lastly, distant from the Pass 12 or 14 miles, there rise two enormous mountains, each of them a few hundred feet over 23,000. These are called Nun and Kun, or together, Nun Kun. They are peaks that are conspicuous from afar, standing as they do a clear 3000 feet above their neighbours. Their aspect varies much as one looks at them from different sides; from Surū we get a side view, which seems to show that they are projecting portions of a rugged escarpment. The annexed sketch gives their form as seen in front, in a distant view caught of them from the boundary of Kashmir.



NUN KUN, FROM THE MARGAN PASS.

THE MOUNTAINS OF THE NORTHERN BOUNDARY.

One way of looking at the mountains that make the oval barrier of Kashmir is to consider them as divided into a northern and a southern part by the Sind River that flows from near the Drās Pass into the Vale, and the Jhelam River as it flows out from Bāramūla to Muzafarābād. The line of these two is roughly east and west; it divides the Vale and its mountain-ring into somewhat unequal parts, of which the southern is the greater.

We before marked the spot where the northern mountains branch from the watershed range, near the Zojī Lā or Drās Pass. This mass of mountains extends, without any break through it, for over 100 miles from east to west, with a breadth varying from 12 to 24 miles. On its south side lie successively the Sind Valley, the northern part of the Vale, and the Jhelam Valley; on its north side is the Kishangangā Valley in its whole length. At its beginning the mass is rocky and precipitous in its central ridge, and lofty enough to form small glaciers. Farther west the glaciers cease and the range branches and spreads. Again, one peak in it, called Haramuk, reaches to the snow line. This is a massive mountain, which, from its rising above the general level of the ridges, is conspicuous from a great part of Kashmir; in the hollows about it are several tarns, which probably occupy the sites of former glaciers. Most of the branch ridges from this mountain, and some of those farther east, which form the northern boundary of the Sind Valley, have a steep cliff for their upper portion, with a more gradual slope below, which is clothed with

either forest or grass. West of the meridian of Haramuk the ridge keeps to a fairly regular height of 12,000 or 13,000 feet for a long distance, until, indeed, it turns round southwards. At the part where I have been along it (between Bandipūr, on the Walar, and Gurez) it is often a narrow ridge, with a slope down on each side of 35° or 40°, running along pretty level somewhat above the limit of the forest; rocks projected along the summits, but made no great cliffs; innumerable spurs jut out north and south, some of which lead down to the valleys, with a moderate, though seldom regular, slope; others end off with a steep fall of some thousands of feet. After the range has turned round south, it gets somewhat higher, rising to over 14,000 feet; then there is a depression, and beyond that it is connected with the Kāj Nāg Range, which, running in a general way east and west, from Bāramūla to Muzafarābād, forms the northern bank of the valley of the Jhelam, after that river leaves the Vale. The Kāj Nāg Range gets gradually higher from Bāramūla towards the centre, where the other line of mountains from the north joins on, being there nearly 14,000 feet. It continues thus high for some miles to the west, but afterwards comes to a level of about 10,000 feet. This, too, has spurs jutting from it, which, when once below the forest limit, bear wood of spruce, and pine, and deodar.

THE MOUNTAINS ON THE EAST.

We must now return to where, on the main chain, the ridge branched off that makes the eastern or south-eastern part of our mountain boundary. This spot, as before stated, is 10 miles east-south-east from the Drās Pass. The mountains that here branch off to the south have at first the form of a high ridge, with a very steep slope on the eastern side. In this neighbourhood there is a peak on it (called Kohenhar) of 17,000 feet; but the height soon diminishes, and then for a long distance the ridge continues in an almost southerly direction at a little over 14,000 feet, with some Passes through it (which connect Kashmir with the Wardwan Valley), between 11,000 and 12,000. The Margan

(11,600 feet) is of these the only one which I have traversed; the top of it is a nearly level valley a mile and a half or more long; the hills rise on each side for about 2000 feet. Thus far it resembles the Drās Pass; but here the fall is on both sides, and not only on one. From the top of the steep slope on the Kashmir side I obtained, by good fortune, a view of the southern hills, of such beauty, of such splendour of colour, that it has ever since remained in my mind so distinctly that the image of it, after many years, can be recalled at will. It was almost an end view of the mountains, but our elevation enabled us to see a succession of the long slopes descending one behind the other to the plain of the valley. The evening sun that nearly faced us illumined the light haze which filled the air; still the distant spurs were seen through it, themselves seeming to be transparent; the distance between each was fully shown by the gradations of light, while nearer the hills lost that aerial brightness and were clothed in rich dark purple.

Between this ridge we have been tracing down from the north and the line of the Sind Valley is a great triangular space (having the edge of the Vale for its base) which is occupied by a branching mass of mountains that has its source or junction with our ridge a little above Kohenhar. The most conspicuous mountain of all on these branches is Gwāshbrārī, a peak of 17,800 feet, from which radiate many spurs, and, between them, hollows filled with small glaciers. Connected on the north-west is a bold peaked ridge, with glaciers in the hollows of it on the north side, which we shall see again on nearing Sonāmarg on our next journey. From there for 30 miles westward a ridge continues that forms the southern side of the Sind Valley—rocky heights of 13,000 and 14,000 feet, whose lower slopes to the north are thickly covered with forest. The end of this forms the line of hill behind the Shālamār Garden, while dividing spurs from other branches form successively the half circles that enclose the Dal and the parganas of Vihī and of Trāhal, each ending in a bold hill 3000 or 4000 feet high above the flat.

From the Margan Pass the north and south ridge continues at

nearly the same height, and with no greater break in it; it then curves round; as it nears Banihāl there is a depression for some miles to the level of about 9500 feet; beyond this, to the west, we may count that the Panjāl Range has commenced.

THE PANJĀL RANGE.

This has first an east and west direction for 30 miles, then it turns to the north-north-west, and continues for some 40 miles more, after which it dies off towards the valley of the Jhelam River.

The first part I have not myself visited, but from either side one sees several conspicuous peaks that belong to it; these are called on the Survey Map Brahma Sakal; they are steep, rocky, roughly pyramidal, mountains that rise up from out the range to a height of 15,000 feet. By the same map one sees that at the foot of them is a mountain lake more than two miles long and three-quarters of a mile wide; near are two Passes, marked 13,250 feet and 14,120 feet, which numbers show the general high elevation of the mountains.

Near where the bend takes place I have myself crossed the Range, and looked carefully at the form of it. This is where two Passes from the Darhāl Valley (near Rājāorī) lead over; also it is near this that the Ratan Ridge branches off from the Panjāl Range. Here an irregular serrated ridge, or a chain of massive rocky peaks, encloses in its turns, and with the aid of branches, amphitheatres, most of which are occupied by tarns. One of these, called Sum Sar,* 12,700 feet above the sea, is in size three-quarters by one-third of a mile; it is almost pear-shaped, tapering off to where the water flows out; on the 12th June it still was frozen, but the ice was beginning to break up; the mountains that encircled it had a precipitous cliff of grey rock about 1500 feet above the lake; below the cliff were taluses of stones and of snow, and at the foot of them lay the water. As far as I could judge (and there was little doubt left in my mind) the lake was a complete rock-basin, the outlet of it was over rock; and from this

* *Sar* is the word for lake in Sanskrit and in Dogrī.

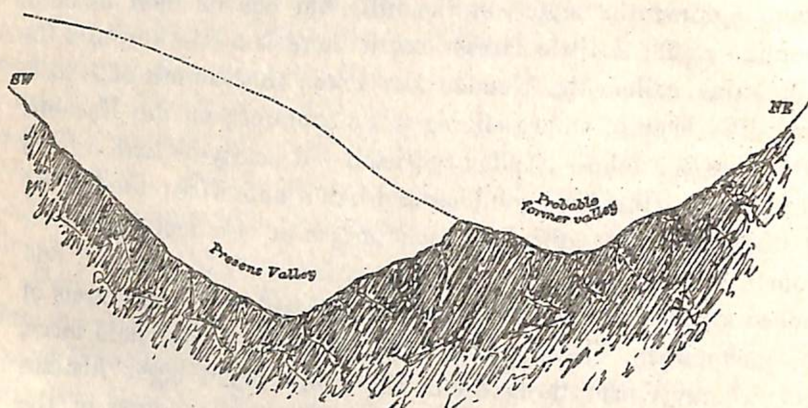
rock-barrier the ground fell steeply for some distance, and afterwards sloped more gently down. The rock, both by the outfall and on the spur to the south of it for 400 feet above, is well ice-moulded and ice-grooved; more distinct evidence of a glacier having occupied the amphitheatre could not be wished for; some scratched stones too are seen in the heaps around. A few miles along, between the central ridge and the valley that leads down to Baramgalla, is a plateau, of which the substance is moraine-matter of the former glaciers. On little hollows of this also are some small lakes—pools that have formed in the inequalities of the moraine. A larger lake, again, called Nīl Sar, abuts against the slopes of the hills, but has its dam made of moraine-stuff. A little farther north there is a Pass through the mountains called the Nandan Sar Pass; the summit of it is a neck-like heap of stones joining two mountains; on the Kashmir side there is a lake—Nandan Sar itself—at nearly as high a level as the neck; this is a mile long and half a mile wide; the barrier of it seems to be either avalanche *débris* or else moraine-matter from a former side-glacier on the north. Beyond, and indeed all around, are amphitheatres enclosed by curving arms of the mountains. The map shows that numbers of these hold tarns, and wherever the tarns occur there are found signs distinct enough of the old glaciers. Indeed this is the secret of the mountain lakes; they are the effect of the action in one way or another of the glaciers that once existed here; those that occupy rock-basins are in the very beds of the old glaciers, which scooped out the rock into the hollow form. To my mind, even where there are no lakes, the amphitheatres themselves are good evidence; for valleys that now hold glaciers very frequently end upwards in an amphitheatre, and, as far as my experience has gone, this form only so occurs, or else in parts where other proofs are found of glaciers having existed.*

Where the Ratan Ridge first branches from the chief one, it

* Now, while discussion is still going on, it may not be necessary to state that Professor A. C. Ramsay was the originator of the theory of the scooping of rock-basins by glaciers; but in case this book should last longer than the controversy, I desire to record it here.

consists, in the same way as what it branches from, of rocky ridges and peaks; farther out it becomes half stony, half grassy; farther on still it is a straight ridge, rocky only at top, the slope wooded, while some of the slopes and the more level places near are covered with fine velvety turf, and have scattered all over them innumerable flowers, as primulas, ranunculus, anemone, and potentilla. The hollow between this and the main Panjāl Ridge is the head of the valley that leads down to Pūnch.

There is a peculiarity in this valley which, though minute in itself, deserves notice for the history of which I think it is a record. On the north side there is a line of gentle hollows and



SECTION ACROSS VALLEY, BETWEEN THE PANJĀL AND BATAN RIDGES.

little plains at high levels, some hundreds of feet above the deeper valley. These hollows are bounded by a little ridge with a steep fall on the farther side. This will be better understood from the woodcut, which represents a section across the valley. It seems to me to show that a change has occurred in the system of drainage; that formerly the southern slope of the valley was where the dotted line is drawn, and that the upper hollow was then the valley bottom; that for some cause, originating higher up towards the head, the deepening of the valley did not occur in the same line as before, but was made to one side.

The next place where I have crossed the Range is at the

Pīr Panjāl, of the way through which some account has been given. The mountains near it are not quite so lofty as those we have left. Beyond we get to ground as high as any in the Range; especially there is an isolated peak called Tatākūtī, 15,524 feet. Again we see by the map that there are tarns in the hollows of the mountains. Beyond this there are some high Passes which lead very directly between Pūnch and Sirīnagar; then, behind Gulmarg, we find a summit of 12,500 feet, which is nearly the last of the Range.

I have spoken chiefly of the higher parts of the Panjāl Mountains. Of its spurs we saw something on the march over the Pīr Panjāl; towards Kashmir, the hill-sides—the slopes of the spurs—are in great part thickly covered with dark pine forest; these spurs ultimately become elongated into long low wooded slopes, and these graduate into the sloping karewas.

From the last-mentioned summit spurs radiate and descend, at the last suddenly, in bold slopes and steep cliffs, for some thousands of feet, to the narrow part of the valley of the Jhelam.

THE JHELAM VALLEY BELOW BĀRAMŪLA.

We have thus, in describing the mountains, completed the circuit of Kashmir and reached again its outlet valley. We before saw that at Bāramūla all the waters of the Vale entered the gorge. From that place to Muzafarābād, where the Jhelam receives the Kishangangā from the north, and itself turns sharply to the south, the distance is about 80 miles, the fall 2800 feet. The narrow valley is confined by the spurs of two mountain ranges. On the north, as was before explained, is the Kāj Nāg Range. On the south there is a ridge which starts from the Panjāl Range at a spot behind Gulmarg and continues for some 60 miles, along a great part of which length its height is from 9000 feet to 12,000 feet. The easiest road from Pūnch to Sirīnagar crosses this ridge by the Hājī Pīr or Pass. The road from Marī goes over a branch of it at Dannā, while the ridge itself extends, narrowing, to the sharp bend of the Jhelam River, close to Muza-

farābād. There is a road along each side of the Jhelam Valley; that on the right bank leads to Muzafarābād and Abbotābād; that on the left bank is the one which, leaving the river after some marches, finds its way to Marī. These two are the best of all the roads out of Kashmir.

The first 25 miles of the gorge, from Bāramūla to Uri, is through extremely fine scenery, of wooded mountain-slopes broken by cliff-surfaces, that rise to great heights above the path, while below it the river either flows in narrow rock-passages or roars over ledges and other obstacles. Some of the forest is of deodar, of which much has been felled to be sent down the stream to Jhelam, for use in the Panjāb; the logs of it are seen as one passes, now being carried swiftly down, now being hurled by the current against some rocky obstruction. Villages are met with at intervals; after Bāramūla the houses are no longer of the fashion of Kashmir, but are flat-topped. People of the Kashmīrī race extend about one day's march down the valley, and after them one comes to the tribes called Kakā and Bambā, whom, in the Race Map, I have classed with the Chibhālīs. The villages are upon alluvial plateaus, at a considerable height above the river; I have not traced out the origin of these plateaus—to what extent they have been made by the side streams, and to what extent by the main one. Ūrī, a large village, situated where the road to Pūnch branches off to the southward, is an example of the kind of situation; it is on a plain several hundred feet above the river, towards which a steep cliff is the boundary, while the side stream flows on another side in a deep narrow channel; behind are the hills, irregularly clothed with pine and deodar.

Below this I am not well acquainted with the valley, but I know that the country a good deal resembles the tract of the Middle Mountains.

CHAPTER X.

THE LATER GEOLOGICAL HISTORY OF KASHMIR.

THE observations of nearly every traveller to Kashmir have tended to show that the Vale was in late geological times completely occupied by a lake. The traditions of the natives—traditions that can be historically traced as having existed for ages—tend in the same direction, and these have usually been considered to corroborate the conclusions drawn from the observed phenomena. Agreeing, as I do, with the conclusion, I cannot count the traditions as perceptibly strengthening it; I have little doubt that they themselves originated in the same physical evidence that later travellers have examined; they do not therefore afford independent support to the theory, but are valuable rather as showing in how early times some races of mankind had learnt to interpret aright the geological records of the history of their dwelling-place.

The existence of a lake over the whole valley of Kashmir occurred at no remote time, speaking by a geological standard, but it was long enough ago to have preceded any of the monuments of man that have yet been discovered.

I shall here be most concerned to describe carefully the facts on which conclusions on this subject must rest; those which I have are not, I fear, enough to make a complete basis for a theory on it; I never had the opportunity systematically to observe for the object of elucidating this point; and at the time when I was able to make some observations I was much less versed in the interpretation of alluvial and lacustrine phenomena than afterward, through travelling in Ladākh, I became. Still, the observations here put down may be trusted as far as they go.

We must remember what was said in Chap. VIII. about the low-level plain of the river-alluvium on the north-eastern side of the

valley (itself slightly sloping from south-east to north-west), and the karewas or plateaus, which are mostly on the south-western side, and which slope from south-west to north-east, excepting some quite to the north-east, which are flat-topped.

The substance of the flat of the low-level plain is loam or clay that has been deposited from the river in its overflows; additions to it are still going on, at all events in years of flood. There is no reason for arguing a former permanent lake from this; the alluvium has a direct relation to the river in its present state; it falls with the fall of the river in its course through the Vale. Occupying part of the low-level flat are the present lakes, in which, undoubtedly, the formation of deposits purely lacustrine is going on; these probably it would be difficult, if they were brought to view, to distinguish from some of the alluvium, but there should be shown more of sifting in the lake deposits proper than in the flood-alluvium, more stratification of matters variously composed.

There is no good evidence that any depth of lacustrine deposit has been formed round buildings or other works of man, although certain changes as to level of water may have taken place in his time. Thus at Mānas Bal there is a temple partly submerged beneath the water of that lake. I am not clear about the cause of this submergence, nor, indeed, as to the origin of the lake itself, which, though seemingly resting on alluvium only, has a depth of 47 feet, at all events; it may be that the rise of the waters over the base of the temple is due to the supply of water brought by the later-made artificial canals not having been able to drain off to the river, except after a general rise of the lake. Some buried ruins and broken pottery at Avāntipūr (on the Jhelam, above Sirīnagar, 15 miles from it by land) have been brought forward to prove that somewhat important physical changes have taken place since the occupation of the valley by civilised man. An examination of these did not at all convince my mind of this. I saw nothing that might not have been produced by disintegration of the substance of the ruined building, deposition, perhaps, of flood-alluvium, and accumulation of rain-wash from the hill-side near.

We will now turn to the definite geological evidence of an old lake of large extent.

Looking at the composition of the karewas, we find them to be made up of beds, horizontal or nearly horizontal, of clay and sand. The following is a characteristic section; it was measured at Pīrū, a mile east of Islāmābād, in one of the flat-topped karewas:

	Feet.
Rather coarse drab or brown sand, with some small pebbles	20
Fine soft brown sand	3
Hard, very fine-grained, sand	15
Blue sandy clay	5
Fine soft sand	5
Coarse sand, like the uppermost bed	2

Though no more than this 50 feet could be plainly seen in one section, yet it was clear that there were similar beds all through a thickness of 250 feet.

Some of the coarse sand I have seen hardened to a stone. At other places not far off there is a very fine impalpable buff sand, like the material of the sandy beds in the Wealden formation of Kent and Sussex; this I think was glacier-mud, the product of the grinding of siliceous rocks by glaciers. At other places there is a greater proportion of clay and loam.

On the north-eastern side of the valley, the karewas, which are there flat-topped, are exposed to a depth of 200 or 300 feet, and it is clear that their general composition is the same as what is shown in the above sections. On the south-western side they slope up with a gradual slope towards the mountains, but are seldom cut into by the valleys for a much greater depth than that. We have at present no means of knowing to what depth below the level of the lower parts of the Vale such deposits extend.

At Islāmābād, where the karewa occurs from which the above instance has been taken, there is a hill of the palæozoic limestone separated from the mass of the mountains, or only connected with it by this plateau. This hill shows on its outer face other phenomena connected with the old lake. Behind the town, below the level of most of the beds we have been looking at, there are beds of a conglomerate of rounded pebbles of the lime-

stone, of all sizes, and upon these is an accumulation of large angular blocks. These beds lie sloping on the sloping face of rock; their angle with the horizon varies from 7° to 15°; there is sand and calcareous mud mixed up with the limestone pebbles.*

There can be no doubt that these pebble-beds were the shingle beach formed at the foot of the limestone cliff, when this hill was part of the shore of the lake. Whether they were formed before the finer deposits—that is before the lake had risen to the higher level—or later, after a good deal of denudation had occurred, and the lake had sunk to this level again, I cannot say, for I saw no section to tell of the relation of the two kinds of deposit. But their existence is conclusive of a lake of such a size that its waves had the power to fashion beaches out of the waste of rocks. The finer deposits again are exactly such as are deposited in the stiller, deeper, and more central water of such a lake; in these beds fresh-water shells have been found.

In considering the whole question of the lake, we must try to come to a conclusion on two separate points: first, the extent to which the lacustrine deposits existed before they were denuded; secondly, the level to which the waters of the lake must have reached.

On the first point we may conclude that the present flat tops of the karewa plateaus are really the original upper surface of the deposit, that their present position shows the levels to which the lacustrine deposits had accumulated. A plane, not indeed an even one, joining the tops of all the remaining plateaus would represent the position and form of the lake bottom at the last. This plane would be nearly flat along the north-east side of the valley; it would slope up with a gradually increasing angle towards the Pānjāl Hills. Now the vertical distance of various places of the present surface below this imagined plane will represent the amount of denudation of the lacustrine beds that has occurred since the drainage of the lake—a denudation which has been effected by the gradual eating downwards of the drainage streams. This vertical distance, as has been implied before, is from 200 to

* These beaches were noticed by both Vigne and Cunningham.

300 feet; the level of the plateaus is about that much above the valley of the chief river; but this height is greatest at the Islāmābād end and lessens towards Sirīnagar and below it; that is to say, there has been the greatest amount of denudation in the upper course of the river.* The streams that flow from the Panjāl Range have cut through about the same depth of the lake-beds, but they have made for the most part narrow gulleys only. At the mouth of the Sind Valley are alluvial deposits, which must be looked at in connection with the lake-beds; there is a bank of alluvium 200 feet high and more, composed of sand and gravel; it was probably deposited by the Sind River, when the level of the open vale was growing to be much higher than at present, that is to say, this thickness was being formed as the level of the lake-bed rose.

For the other point, the level of the waters of the lake. They must have been at all events as high as the karewa slopes (those of purely lacustrine origin) on the flanks of the Panjāl Hills. I cannot speak definitely, but I think the lake level at one time could not have been much less than 7000 feet above the sea.

As to the origin of the lake I have no theory to offer. Unfortunately, I had not latterly gone to the gorge of the Jhelam, so as to have had an opportunity of examining it in the light of my later experience of such phenomena as these, but I know that in that gorge are alluvial accumulations of considerable thickness, the mode of formation of which must be considered at the same time with that of the Kashmir Lake. Under these circumstances I shall leave the subject without venturing even an hypothesis.

There is another set of phenomena which, if one understood their whole bearings, would throw light on the later geological history of Kashmir, at all events on the history of times just preceding those in which the beds we have hitherto been describing were deposited. Major Godwin-Austen has described† some strata that occur at Hirpūr; they are beds of conglomerate, sand, and

* As to the far north-western portion of the valley, I am not well enough acquainted with it to speak.

† 'Quart. Journal Geol. Soc.,' vol. xx., p. 383.

loam; they dip down towards the Vale at an angle of 20° or more. Major Godwin-Austen observed a thickness of several hundred feet, and found in these many species of land and fresh-water shells, with plants and minute fish-scales. I believe that these same beds occur at many places from Hirpūr to Bāramūla, between the old rock of the mountains and the material of the karewas proper. More full and minute observation of them is required than has yet been made before one can reason on what they may prove. They lead us back to an earlier part of history than I intended to speak of; my object in mentioning them is simply to draw attention to their occurrence, in hope that other travellers may be able to work out their meaning.

CHAPTER XI.

MARCH FROM KASHMIR TO LEH IN LADĀKH.

UP THE SIND VALLEY TO THE FOOT OF THE PASS: SIX MARCHES — THROUGH THE PASS TO DRĀS: TWO MARCHES — DRĀS TO KARGIL: THREE MARCHES — KARGIL TO KHALSĪ: FOUR MARCHES — KHALSĪ TO LEH: FOUR MARCHES.

THE next great tract to explore will be the country of Ladākh. The account of it will occupy three or four chapters. The present chapter, which is preparatory, will treat of the road which joins the two towns Sirīnagar and Leh, the capitals of Kashmir and Ladākh respectively. The journey along this road may be taken in continuation of the march from Jummoo to Sirīnagar, which was described in Chapter VII.

I think there is this advantage in intermixing with the more systematic description of a country that of a particular portion traversed, namely, that we are thus able to describe a sample of the country somewhat minutely, from which sample the details in the larger picture that is to be presented may be filled up; or, in the case of its being the earliest visited part of a new district, we can give what were our own first impressions, which often fix the truth in the mind better than knowledge later got.

Of this march from Kashmir to Leh, part will be through country with the geography of which we have already had to do, while that part which lies beyond the Drās Pass will be entirely new ground for us. This latter is, indeed, exceedingly different from any portion of the country we have hitherto visited; it is a country naturally separated in various respects from Kashmir; not only are its physical characters widely different, but its inhabitants belong to another of the great divisions of the human race, and follow a religion different from either of the two professed by the tribes we have hitherto met with.

It is the great chain of snowy mountains that makes such a physical separation, and has favoured, if not induced, the other differences. The lowest Pass through these mountains naturally determines the route which of all others bears the greatest traffic between the lower countries and the westernmost part of Tibet. This lowest gap in the mountains is the Drās Pass. Our route (through this Pass) from Sirīnagar to Leh is 259 miles in length, a distance which is ordinarily travelled in a march of nineteen days. Speaking generally, it is for these hills not a bad road; it is commonly passed over by laden ponies, though a few places on it are dangerous for them. I shall describe the route in five sections. The details of the stages will be found in Appendix IV.*

UP THE SIND VALLEY TO THE FOOT OF THE PASS: SIX MARCHES.

The first march is a short one, in the open Kashmir Valley, to Gāndarbal. From the city the road leads us over a plain which is at a higher level than that of the present river-alluvium; on the left there is a fall of the ground, of something less than 100 feet, down to the level of the flat marshy tract called Anchār. After 10 miles or so we come to the foot of one of the mountain spurs, and, rounding the base of it, reach Gāndarbal.

We are here at the mouth of the valley of the Sind River, where that valley widens to debouch into the open vale. Near above this the waters of the Sind River have divided; they irrigate the rice-fields that occupy the wider space, and below they communicate with the main river, the Jhelam. By means of these water-channels we could have come to Gāndarbal by boat, and it

* Although this is the only route from Kashmir into Ladākh, yet other roads lead into it from other portions of the hills or from the Panjāb. Of these some account will be found in Appendix IV. One of them has of late got much into use—that which leads through the British districts of Kullu and Lāhol into the southern part of Ladākh, and at certain times of the year it may deserve preference; but the one by Drās, which will be described in the text, has the advantages of a less ascent, a greater number of months during which it is open, and a more inhabited country that it passes through, advantages which enable it to retain its position as the chief route from the Plains to Ladākh.

may often be convenient to make this first stage from Sirīnagar by that mode of conveyance, especially as the greater part of it can be got over during the night.

From Gāndarbal the road onwards keeps at a higher level, on an alluvial plateau that lies between the low plain watered by the branching streams and the hill-side. As compared with that watery flat, the plateau rises as one goes on till, in five or six miles from Gāndarbal, it has reached a level 300 feet higher. Here and there it is cultivated, but for the most part it is covered with a brushwood jungle, with many half-wild fruit-trees scattered over it. Soon we have to descend the 300 feet from that plateau and cross the river. A few miles more, and we reach the next halting-place Kangan, where we are quite within the Sind Valley, and out of sight of the open vale.

Now, in the next two marches, a distance of 25 miles, we enjoy the finest scenery of its kind in Kashmir; this kind does not, indeed, give us wide views across a hill-surrounded plain, but it shows us all the beauties of a valley bounded close by lofty hills of varied surface—richly clothed with forest or covered with thick herbage—broken by cliffs, and crowned with rocky peaks.

The valley-bottom, a mile or two in width, is occupied by plateaus, slopes, and low-level flats, which alternate one with the other. These spaces are in part river-alluvium, and in part belong to the alluvial fans of the side streams, often where more than one have coälesced. The river flows through the low land, frequently dividing so as to make islands of alluvium, on which grow groups of fir-trees. Of the plateaus and the fan-slopes the whole surface is covered with verdure, and it is chiefly upon them that occurs the cultivated ground.

The mountains rise steep behind the terraces and the fans. On the left bank, for 15 miles without a break, there is a great slope, extending up for thousands of feet, covered with dark forests of silver-fir, spruce, and *Pinus excelsa*, with some deodar; here and there lines of lighter green occur, in the hollows maybe, where the conditions are more favourable to the growth of

deciduous trees; along the lower edge, too, a growth of them made a belt of brighter green beneath the dark conifers;—

"Up-clomb the shadowy pine above the woven copse."

For 5000 or 6000 feet up, this forest continues along that whole length of 15 miles; in some parts it reaches to the very summit of the ridge, in others the mountain rises above the tree-limit, and there is then a belt of green pasture above the forest, and above that rocky peaks and beds of melting snow.

On the right bank, the north side of the valley, the aspect of the hills is different. Their southern outlook does not favour the growth of wood. For a great height up, their sides are of steep but grassy slopes, broken by rocks and lines of cliff. Still at every mile they show new forms, as, in going along, one opens the successive ravines, and one's view reaches to the higher parts, to the lofty precipitous rocks of the centre of the ridge.

Besides these grand beauties of the mountains there are more homely ones in the valley. The path lies through glades shaded by trees of rich and varied foliage, with flowers of jasmine, honey-suckle, and rose delicately scenting the air; it passes by villages which are surrounded by and almost hidden in groves of thick-leaved walnut-trees. Each village grove cheers one by its homely, pleasant, look, and each wilder glade tempts one to stay and enjoy in its shade the combined beauty and grandeur of the mountain views.

The atmosphere of the whole of this valley is distinctly cooler and fresher than that of the Kashmir Vale. On one's reaching Kangan the difference is already discernible; the heats that sometimes oppress one in Sirīnagar are there left behind. The stream that flows in the valley is one of much volume and velocity, and its waters are always cold from the snow and glacier-ice that it drains from; the road crosses it several times over wooden bridges; as one stands on these one feels a current of cold air, air that has been dragged down from the higher parts by the water, and is kept cool as it flows by its contact with the stream, to which it is closely confined, for not a yard beyond its banks does the current extend.

When one continues up the valley the climate becomes more rainy, and at certain times of the year—as July and August—showers fall almost daily. The crops grown are in part *bārānī*—that is, depending on rain—and in part irrigated; the irrigation cuts are drawn chiefly from the side streams; rice, which is the crop most generally grown by such aid, extends as far as the village of Gūnd, about 7000 feet above the sea; higher up the chief cereals are *chīna* (one of the millets) and *tromba*, or buckwheat, which last is a most hardy plant, that ripens its grain with comparatively little sun. Towards the head of this valley it is not excess of cold at any time, but absence of sun, from the prevalence of rain-clouds as harvest-time comes near, that limits the growth of the various kinds of crop.

At Gagangīr, which is two days' march above Kangan and four from Sirīnagar, the valley has much narrowed. The river flows at the very foot of the wooded mountain-slope of the left bank, and on the right there is but a narro strip between the stream and the opposing hills. The cultivation of this strip supports a small village; the walnut-trees that surround it are the last we see in this valley; the level of Gagangīr, which is about 7400 feet, may be counted the limit of them here. Here, too, ends the characteristic scenery of the last few marches; beyond we shall come to scenes of a different kind; but before proceeding to them let us turn to take a look back and cast the eye down the valley. One is struck with what I have often noticed in other mountain valleys after travelling some way towards their sources and then turning back. The mountains seem diminished, seem as if they hardly could be the same that towered above us as we passed along the foot of them; it seems, too, as if the opening of the valley into the plain below must be near at hand; it is difficult to think that there are so many miles to be traversed in a valley deep between high mountains.

Beyond Gagangīr a great rocky ridge on the north side approaches its opposite neighbour on the south, and the valley of the river becomes a gorge through which the waters foam, while the path is carried among the large fallen blocks that fill up the

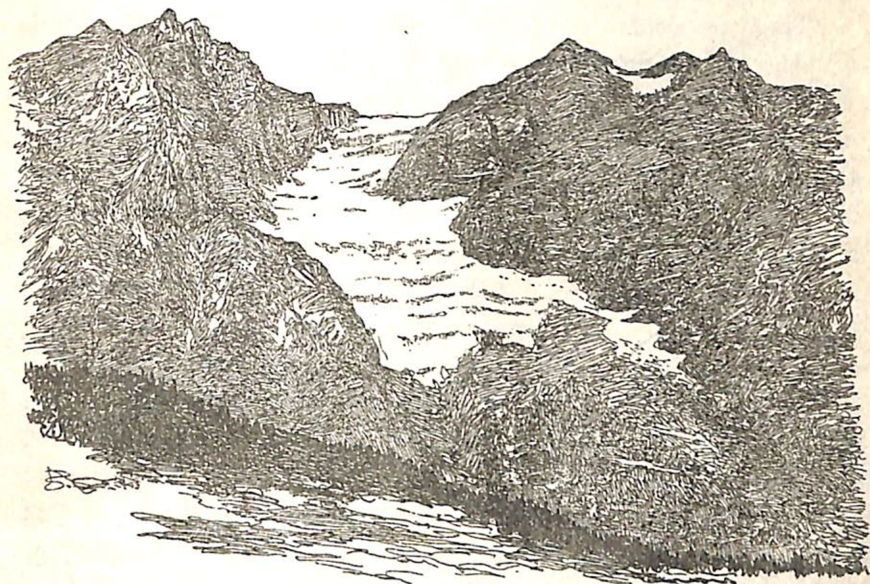
space between its right bank and the steep cliff that overhangs it. This position causes the road for some four miles to be extremely rough; it is the worst bit in the whole 250 miles to Leh; it is very difficult for horses—indeed to ride along it requires the cleverest of hill ponies, and for him it would not be without risk. The summits of the heights that overhang our way are not within our sight, but on the opposite bank we see cliff upon cliff, each crowned with firs, and above these the mountain rises to peaks of a great altitude.

After a few miles we pass clear of the gorge and emerge into more open ground. Crossing the river and rising up the farther bank to a level a hundred or two feet above the stream, we come to the plain called Sonāmarg, or "pleasant plain."* This is a narrow grassy flat, extending some two miles between the hill-side and the river-bank; connected with it is a wider tract at the meeting of the side valley from the south-east. This latter is a space of beautiful undulating ground, a succession of dells surrounded by hillocks or mounds, which are sometimes connected more or less into a line, and sometimes isolated. The dells are covered with long thick grass and numerous wild flowers, while the slopes of the hillocks have a growth of silver-fir, with sycamore, birch, and other bright-green trees beautifully intermingled; over the mounds are scattered masses of rock.

This space, which seems to be known to the natives by the name Thājwaz, or else one spot on it bears that name, is bounded on one side by a dark fir-covered hill, and on the other, the south-west side, by the stream of the tributary valley, beyond which there rises a great mass of mountains of bare rock, divided into lofty peaks by three or four hollows, in each of which lies a glacier, a small glacier on a steep slope, broken by transverse crevasses,

* *Marg* is a Kashmīrī word meaning a high level plain or open valley; *sonā* means "pleasant" in Dogrī; whether this word is to be found separate in the Kashmīrī language I do not know, but it certainly occurs in some other Hindī dialects. An instance of the etymological mistakes into which travellers may be led by their undiscriminating Persianising munshīs is seen in 'Moorcroft's Travels' (II., 97), where the name of this place is written Sonamurgh, and it is stated to be so called from the "golden bird," a pheasant, found in its vicinity!

and ending off far above the base of the valley. Below the glaciers are stony slopes, which are their terminal moraines, and beneath, wherever the ground is of such a character as to allow of it, is a growth of birch forest. The sketch shows one of these glaciers, lying between cliffs of the rocky mountain-mass and flowing over its own terminal moraine, as seen from a distance of a few miles.



GLACIER NEAR THĀJWAZ, BY SONĀMARG.

The description of this undulating tract of ground will have led many of my readers to perceive that it is an old moraine of a former great glacier. As it is not the only evidence of the greater extension of glaciers in this valley in former times, I will now note down the spots where I have found traces of them along the way we have come. They have also been observed by other travellers; before I visited the valley my attention was drawn to them by Major Montgomerie, who was superintending the G. T. Survey in Kashmir.

The lowest spot in the Sind Valley where I have seen glacier-marks is about 100 feet above the village of Harī, which is

between Kangan and Gūnd, where, at a level of about 6500 feet above the sea, is a well-grooved *roche moutonnée*, and higher up the same hill-side the grooving occurs, up to 500 feet above the river. From here onwards up the valley the same thing is seen in many places, as on the right bank opposite to Surphrā, and again about Gūnd.

In the gorge we see none of this, there has been too much later destruction of the rocks.

Then we come to our undulating tract of Thājwaz. It is a space occupying nearly a square mile; the highest mounds may be 150 feet above the old alluvium of the Sonāmarg plain, and 400 or 500 feet above the stream near, a great portion of that thickness probably being moraine matter. It is to be noted that the masses or fragments of rock which protrude from the mounds are of the same substance (a metamorphic, an altered argillaceous, rock) as the mountains on the south—that great rocky mass we spoke of—and not the same as what is found about Sonāmarg, which is limestone. The conclusion is that the glacier that deposited the moraine which now makes our beautiful undulating park-like ground had its source at the head of the side valley, which is five or six miles up. It must for long have had its foot about Thājwaz, and have gone on depositing its moraine for ages, and must at one time have protruded a mile up the valley towards Sonāmarg—round the corner of the hill.

The marks we observed lower down were made when the whole valley from Harī (and perhaps from still lower) upwards to the source of the Sind River (south-east from the Drās Pass) was filled with ice, making a glacier 40 miles in length. This is not much greater than glaciers we shall come to in Baltistān, but it contrasts strongly with the small glaciers remaining at high levels in the hollows of these mountains. Of these small separated glaciers there are still over thirty in the basin of this river.*

* It is *possible* that this whole length never was occupied by one glacier; that even in the time of extremest cold the glacier ended off at Thājwaz, while the lower marks were made by another which had its sources in the side valleys that come in below the gorge.

The determining cause of the accumulation of so much moraine matter at the particular spot, Thājwaz, no doubt was the narrow gorge below, which made the ice of the side glacier (in an intermediate later time, when the main-valley glacier had retreated as far back as Sonāmarg or farther, and so the two had separated) to accumulate, to abut perhaps against the opposite mountain, and, keeping long at that level, to shed the material it carried, some being borne away down the gorge, while that thrown off on the upper side has remained to this day.*

The village of Sonāmarg, a couple of miles above Thājwaz, has but half a dozen houses; it is with difficulty kept inhabited, for the cloudiness and showery character of its climate combined with the altitude, 8600 feet, make the growth of all crops precarious. The Maharaja's Government gives some advantages to those who will settle here, for the sake of their aid in carrying the post to Ladākh across the Pass; for this is the last inhabited spot in the Sind Valley; no other house is met with until we are beyond the Pass, in the Drās country.

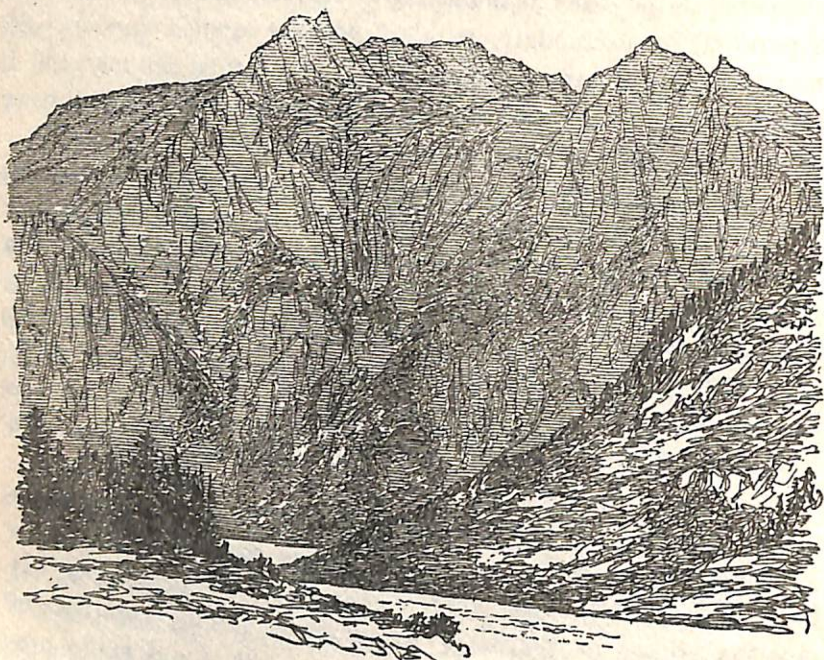
At Sonāmarg we no longer have the homely look of the Kashmir village; here no trees shelter the cottages, the plain is bare, and the fields look unpromising. But the mountains that face the village on the north attract our attention; here beds of greyish-blue limestone stand up perfectly vertical and make precipitous slab-like faces of rock across the higher parts of the spurs.

From Sonāmarg to Bāltal the valley is immediately bounded by hills a few thousand feet high; on the north side they are covered only with grass; on the south they are varied with tracts of forest. In some places the fir wood spreads down to the part traversed by the road; when we get to Bāltal the plain again is bare, but some of the lower hill-slopes are covered with birch wood and firs.

Bāltal is the last halting-place before the Pass. Here the main stream of the Sind River turns off almost at right angles

* On the steep side of the mountain on the right bank of the main river (above the bridge) I observed glacier-scratches at a height of about 500 feet above the water; their direction was E. and W., or E.N.E. and W.S.W.

towards the south; a smaller, steep, stream comes down from the north-east, while right in front of us as we come up from Sonāmarg is a great precipitous rocky mountain, which I have tried to represent in the annexed sketch.



VIEW APPROACHING BĀLTAL.

A road leads up the valley of the main stream to Amar Nāth, a noted place of pilgrimage for Hindūs; the pilgrims, however, approach it from the other side, from the direction of Pailgām, crossing a Pass to reach it, as the route by this Sind Valley is apt to be made impassable in summer by the rising of the river waters.

THROUGH THE PASS TO DRĀS: TWO MARCHES.

We follow the valley of the smaller stream that comes down from the north of east; after a short distance we see that it comes out of a narrow steep-sided ravine which has a considerable fall; to follow it up through the ravine would lead us direct to the

Pass; this, however, can only be done in winter, when the gorge is filled with snow, or in the spring, when the water finds its way down beneath the snow-bed, which still is firm enough to support the traveller's steps. About the beginning of June the snow-bed breaks up and the ravine is no longer passable; the path then is taken in a zigzag up the hill-side on the left, and after a rise of more than 2000 feet from Bāltal it again meets the stream, above that straitened part of its course. The character of the Pass itself was spoken of in Chapter IX.; we saw how, after having risen such a height, one did not descend on the other side, but that the narrow level valley through the mountain continued with but a gentle fall; indeed the change of slope, where the water ceases to drain to Kashmir and the Jhelam and begins to flow towards the Indus, is hardly perceptible to the eye, and afterwards also the gradient of the valley keeps low. The rise to the summit brought us above the level of fir-trees, but when as we descend we again reach down to that level they do not reappear; bush-like trees of birch grow here and there on the lower part of the slopes; these and the grass that covers both the slopes and the valley-bottom continue for some miles; but as we approach Drās, especially when we come into the more open valley in which that place is situated, we see what a different country is this we have come into from the fertile one we have left behind.

The valley of Drās is an opening among the hills which leaves a space nearly flat with a width of a mile and a half or two miles, and a length of near three; it is not one flat, but consists of alluvial plateaus of different levels.* This space is bounded on the north by low irregular-shaped spurs of hills, whose higher parts are some miles back but can often be seen jutting up in rocky peaks or as a jagged ridge; the surface of these hills is thoroughly bare of vegetation; they show a barren brown expanse of stone and rock—furrowed rock, loosened stone, and talus of

* For an account of the alluvium of this valley and of the alluvial deposits generally of Ladākh, I must refer the reader to a paper read by me before the Geological Society, and printed in their 'Quarterly Journal,' vol. xxix., part 3.

fallen masses. On the south side of the valley there is first a low ridge, and then above that tower great precipices of limestone rock. The Drās River enters the valley by a gorge, flows through it 25 feet below the level of the lowest alluvial terrace, and leaves by a similar narrow rock-passage.

The barrenness of the hill-sides is caused by the absence of moisture in the air and of any but the very slightest fall of rain. The range we passed through, and which in a former chapter was described in some detail, and shown to be generally a very lofty one, intercepts the moisture, whose source is the sea, obliges it to be precipitated on the outer side, and shelters this Ladākh country from the periodical rains, cutting off the supply of moisture to such an extent that the hill-sides are not only bare of trees, but of grass as well, free from forest and without herbage.

This is the character of all the country we have now to traverse, not only as far as Leh, but all that we have left to describe; so that when not specially mentioned, it must be remembered and taken for granted that the surface of the mountains is bare rock or loose stone.

And not only is the contrast great between the look of the green-clothed, forest-clad hill-sides of Kashmir and the arid, bare, and stony mountains of this Tibetan country, but the feel of the air too is very different; here in Ladākh is a clear light-blue sky and bright sun, with a brisk keen air; it is more a climate of extremes, in that the sun's rays are powerful, being less weakened in traversing the smaller thickness of atmosphere, so powerful as to heat quickly the rocky ground exposed to them, while, from its rarity, the air both receives less heat from the sun's rays, and in the evening allows of a quick radiation from the day-heated ground, so that cold nights suddenly succeed to days that have been felt to be hot by those exposed to the sun. As compared with this Ladākh country the air even of the higher parts of Kashmir is soft and mild.

The valley of the Drās River, though generally bearing out what has just been said as to climate, has not the Tibetan characteristics in the highest degree; the gap of the Pass allows some

moisture-bearing air and even cloud-carrying wind to come through; here occur a greater number of slight showers during the summer than in the other valleys of Ladākh; but the difference is slight as compared with the great difference between the two sides of the Pass, and is most chiefly shown in winter, when the snow lies thicker in Drās than it does farther to the east.

The passage from Bāltal to Drās, a distance of 30 miles, generally done in two long days, is, in the summer, from June onwards, a not difficult road as things go in this country; it can be passed without difficulty by horses; nor does the first fall of snow (which may happen in the end of October or in November) commonly shut the road for them; but later on, usually by some time in December, the snow has become so thick that for horses to attempt the passage is rash, and only men so hardy and persevering as some of the tribes who live about Drās, or else those who get their aid, as I have done—aid that well deserves acknowledgment and thankfulness—can hope to get over in safety. Thus—although in the winter the Drās people, by watching their opportunity and waiting for some days when necessary, will keep up communication between Kashmir and Ladākh, and even carry merchandise over on their backs—the road is not thoroughly open again, ponies cannot attempt it, till the end of May.

The first village that we come to on the eastern side of the Pass, the highest in the valley, is Matāyan, which is 16 miles short of Drās; the next is Pān Drās,* five or six miles farther on; in the more open valley of Drās itself we find numerous hamlets scattered about.

Here, as in all the countries on this side of the main range, there is nothing grown without irrigation; at Drās, barley, and the variety of it called grim, are the grains mostly cultivated, for these can ripen in the time that the short summer allows. The villages

* Without attempting myself to give a derivation of the word "Pān" in the name of this village, I must protest against the connecting of it with the Persian word *Pāīn*, lower. It will be enough if I point out that Pān Drās is higher up the valley and at a higher absolute level than Drās.

are bare of trees; only at one or two places a few willows and poplars are to be seen.

The inhabitants are of two, or even it may be said three, distinct races; Matāyan has Kashmīrī who have been settled there for some generations; the hamlets of Drās are partly Dārd and partly Baltī; of these people I propose to defer the account till later.

We have spoken of Drās as one of the valleys of Ladākh. The bounds of Ladākh may be taken differently, according as we consider it politically or from any other point of view. Drās has not the same inhabitants nor the same religion as the central part of Ladākh, being in these respects more allied to Baltistān; but in the time of the old rulers Drās was part of the kingdom of Ladākh, and we too will reckon it as coming under that name, although latterly, for administrative purposes, it has been put with Baltistān.

DRĀS TO KARGIL: THREE MARCHES.

The distance from Dras to Kargil is 40 miles; it makes two good marches and a short one. The road continues down the same valley, over stony ground, along the foot of great rocky mountains. Few villages are passed, and even those one goes near are not always visible from the path, for some are situated hundreds of feet above, on plateaus, the remains of denuded alluvial fans.

I have used this word "fan" before, and I shall in the future so often have to repeat it, applying it to a certain form of alluvial deposit, that it will be well here to explain the exact meaning attached to it.

When a side-stream debouches from a narrow gorge into a wide valley it is apt to deposit the material it carries down (washed from the mountains behind) in a fan-like form at the mouth of the ravine. This fan is part of a low cone, having its apex at the point of debouchment; the slope of it, which may be a few degrees, is very regular along each radius; the spread of it may vary from a few hundred yards to a few miles; the thickness of the

deposit, the height of the apex above the plain or the main-valley bottom, is often many hundred feet.

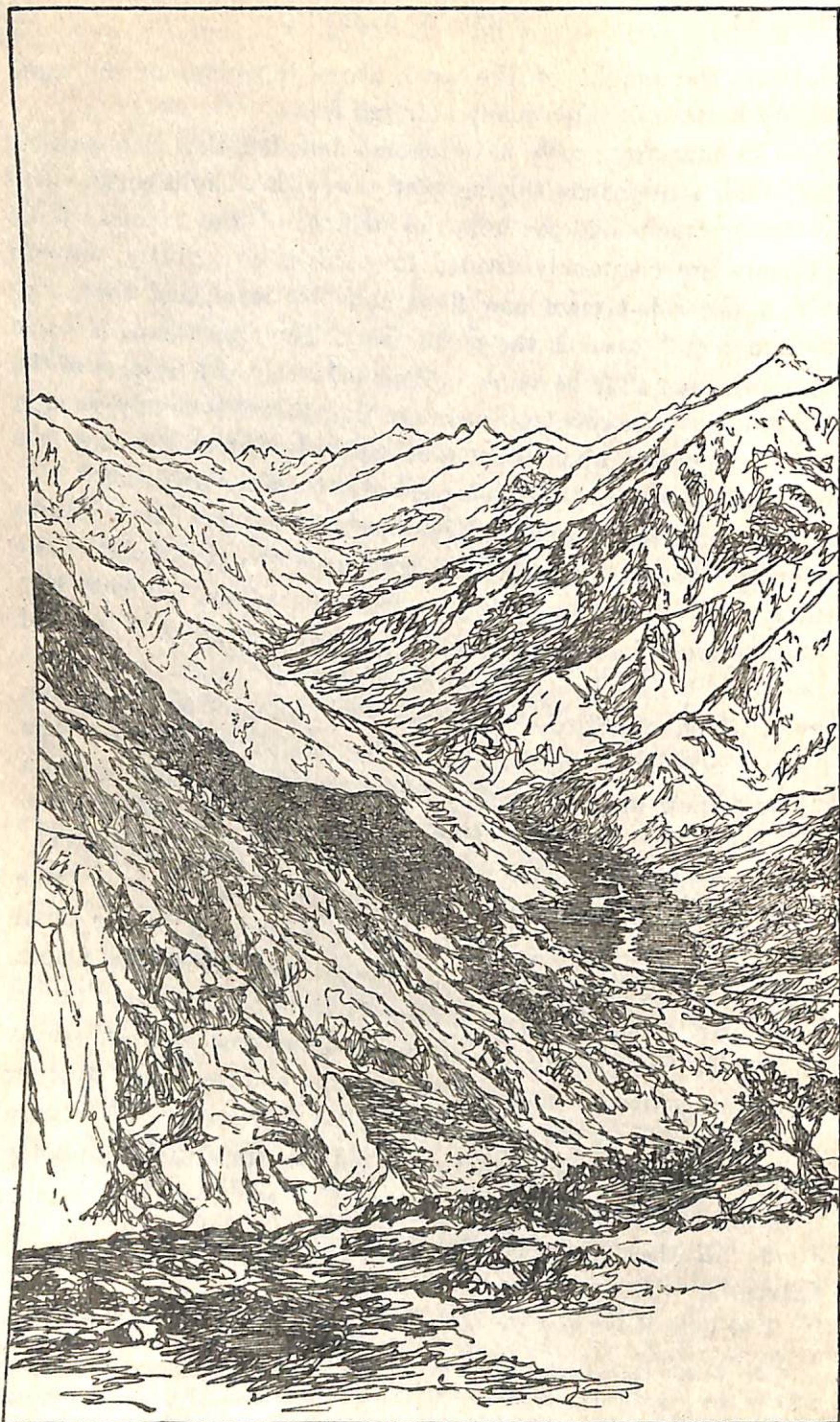
The fans frequently have become denuded, that is to say, cut up; their remains are sloping plateaus (with a slight curvature of surface) attached to the hill-sides in front of the ravines; these plateaus are commonly divided into halves by a gulley, through which the side-stream now flows at a low level, and they may end in a cliff towards the main river. The importance of these fans (whether they be whole or denuded ones) with respect to the habitation of the country consists in this, that it is chiefly, though not universally, upon them that cultivated ground occurs, the water of the side-streams being led over them for irrigation.*

To return to our route. Below Tashgām we come into a granite country; the mountains rise on both sides to a great height; not always are they seen thus lofty from the valley, but from any vantage ground above we look on to serrated ridges of 17,000 and 18,000 feet, the whole vertical height from that level down to the river, which is at little more than 9000, being of bare, irregular, broken cliffs and their débris. The sketch on the next page shows a view up a side-valley that penetrates into the mountain mass to one of the lofty ridges; its whole sides are naked, but a narrow strip of watered and cultivated ground lies in the bottom.

The mountains, though at the first glance they show no trace of herbage, yet do bear a little; this is sought out by the small herds of goats that are driven to the more favourable places. Along part of this road two or three kinds of bush occurred pretty plentifully; one is the pencil cedar (*Juniperus excelsa*), which sometimes grows low and sometimes taller and tree-like; another is a bush called by the people "umbū" (a *Myricaria*); then there were currant bushes and numbers of red-rose trees, each tree being magnificently furnished with flowers, this was in the middle of June; all these were on the lower slopes among dry stones, flourishing where no grass would grow.

The Drās River goes on north-north-westward to join the Indus;

* For details about the formation and denudation of fans in Ladākh I must again refer to the paper before mentioned, in the Quarterly Journal Geological Society, xxix., 3.



THE KARKIT VALLEY, SEEN FROM THE OPPOSITE BANK.

we do not in our route to Leh follow it so far, but turn round a corner to the right, and take to the valley of the Surū River (one of about equal volume with that from Drās), passing here round a rock that the road has very imperfectly been cut in, so that in places the roadway has had to be constructed of poles lodged in projections of the cliff; these are loosely covered with slabs. In a few miles after this we come to the collection of villages which bear the name of Kargil.

At Kargil is another of the wider openings between the hills; up to this spot the granitic hills had continued—bare, rocky, and lofty; but now on the east there appear lower hills of a softer material, alternating beds of clay and sandstone. Between the Pāskim stream and the Surū River is an alluvial expanse of some square miles, a succession of terraces of alluvial gravel. These plains are uncultivated; hitherto the work necessary for bringing the water oi the Pāskim stream on to the lower wide terrace, though once or twice commenced, has not been successfully accomplished; but narrow strips not very high above the two streams are watered by small canals led from them.

The villages here are about 8900 feet above the sea; partly from this somewhat less altitude as compared with Drās, and partly from the place being less in the way of the comparatively moist air that steals into this country through the Drās Pass, there is both less snow in winter and a greater force of sun and warmth in summer to help on vegetation. Here wheat flourishes as well as barley; but the great difference to be observed was the growth of many fruit-trees (chiefly mulberry and apricot), as well as willows and poplars, along the watercourses that are led over the terraced fields. Such villages as we now see are narrow strips of ground, artificially banked and levelled into still narrower terrace-fields, and backed by great rocks that with a favourable aspect reflect the heat and act almost like the walls of our fruit-gardens. They are richly carpeted with heavy-eared crops and crowded with fruit-trees, the bright greenness of whose leaves delights the eye of the traveller, who for many miles has wearied under the sameness of gazing at nothing but rock and loosened stones, and the shade

of whose boughs, as, after the glare that one is exposed to on a summer day's march among these bare mountains, one lies by the stream that ripples beneath them, is itself a reward for the exposure and toil.

KARGIL TO KHALSI: FOUR MARCHES.

It will take us four marches to reach the valley of the Indus; for though at Kargil we are only 12 or 13 miles away from that river, yet the more favourable course is to avoid it for a few days' journey still, to keep in the valleys of certain tributary streams whose direction lies well in the line of our road. The ground we shall go through is occupied by the ramifications of a great range of mountains that lies between the main chain on the south-west and the Indus River on the north-east. This range is irregular both in course and height; from some directions it is to be traversed only by very high Passes, but, as we are going, we shall cross two ridges that belong to it by comparatively low gaps quite easy to surmount.

From Kargil we first go over the stony alluvial plain, which is bare of vegetation, and then, after five miles, descend to the village of Pāskim, a large village watered by cuts from the stream called Wakha; these watercourses are bordered by many willows and some tall poplar-trees. Nearly a thousand feet above the village, on the edge of a cliff, are some remains of a fort that used to be held by a Rajah tributary to Ladākh; an account of the taking of this place by the Dogrās is given in General Cunningham's book. The valley now narrows, and for 12 miles the road takes us up between dark rocky hills whose near slopes, those within sight, are not lofty. The halting-place is Shargol, 20 miles from Kargil. A more even division of the distance would have been to make Pāskim the stage instead of Kargil, but this latter is the more usual rest-place, as it is now the head-quarters of the district, and besides it is often convenient to make marches of different lengths, for a quite short one will give the camp a long leisure for rest, or for repairs, or other business.

Shargol is the first village where there is a Buddhist monas-

tery *; it is a small monastery, with but a few Lāmās, attached to the one at Mulbek farther on. We thus see that we are reaching the country of the Buddhists; the people of Shargol are nearly all of that faith, though for some way farther there is a mixture of Muhammadan Baltīs.

In the next march we pass Mulbek (also called Mulbe) and see the monastery, one of some size, and by the road-side a large idol carved in the rock, and then we rise to the easy Pass called Nāmika Lā,† 13,000 feet, a depression in soft (shaly) rock between mountains of limestone. A very easy descent brings us down to a stream that flows direct to the Indus; turning to the right we follow the valley of this stream upwards, and in a few miles we come to Kharbū, a Bhot ‡ village, which makes another stage.

Thence we continue up the same valley: the mountains on the south of us are high mountains of limestone, which rock makes the chief part of the very lofty ridge beyond. Keeping on towards the east, we rise to a Pass of very similar character to the last, called Fotū Lā; it is 13,400 feet high; the ground is smooth, being composed of shale, but close by, on the south, are the rocky limestone hills; a gentle slope for 2000 feet down a valley that is comparatively open, brings us to Lāmāyūrū.

At Lāmāyūrū we are well among the Buddhists or Bhots. Here is a large monastery built on the summit of cliffs which are partly rocky and partly of alluvial matter; some portions of it are very curiously built on timbers placed across chasms, or joining ridges or pinnacles of the hardened alluvial gravel. The cultivated ground is a narrow strip lying for some length above the sloping valley-bottom. As we continue down, we join the valley of a large stream that flows from Wānla; this is extremely narrow; the path has with difficulty been made along the slope of the hill that rises immediately from the stream; there are cliffs to be passed that have necessitated wooden galleries for the road to go on; this has, however, been constructed with a good deal of skill, and by the

* The word for monastery in the Ladākhī language is *Gonpā*.

† In the Ladākhī language *Lā* means Pass.

‡ The word *Bhot* means Buddhist, or perhaps, more particularly, Buddhist Tibeṭan. The Ladākhīs are called Bhot both by themselves and their neighbours.

plan of crossing the stream three times, by wooden bridges, we pass the difficulties and find our way to the valley of the Indus itself, and, after another mile or two and after crossing the river, to the village and halting-place of Khalsī.

KHALSI TO LEH: FOUR MARCHES.

The Indus is spanned by a wooden bridge where rocks narrow it up to a width of 60 or 70 feet only. The bridge is commanded by a small fort on the higher bank; the path from the bridge, indeed, is led along the covered way half round the fort. The village of Khalsī is on a plateau about 250 feet above the river; there is here a long strip of cultivated land watered from a side-stream; crops and fruit-trees grow on it well, and even luxuriantly; walnuts and apricots ripen, though the height above the sea is something over 10,000 feet.

From this place upwards, to near Leh, the Indus Valley has one character. The river flows either between rocks or against alluvial cliffs, according to whether the mountain spurs reach the water or strips of alluvium-terrace intervene. The hills that are seen are not very lofty; all are bare and extremely dry. The only green visible is on those spots where the streams from the mountains on the north-east are brought on to the alluvial plateaus and enable the ground to be tilled; there villages have been formed, and we see the verdure of corn-fields and of orchards, or rather of the lines of fruit-trees that have been planted along the watercourses that skirt the little fields.

For the next three days' journey there are two routes that may be taken; they unite again one march short of Leh. The first is along the valley, keeping as near to the river as the ground will allow; the other is a higher route along a series of plateaus behind the former; it is this latter that we choose; the valley itself will be again spoken of in a later chapter.

After continuing for a few miles in the immediate Indus Valley, we turn up a ravine to the left, and, rising some 1500 feet, we get on to a high plain between an outer, low, range of hills and the

inner high one. This plain is interrupted by cross valleys that, originating in the higher range, pass through the lower one down to the Indus; the plain thus becomes divided up into wide necks of land. In the first cross valley were several villages, one of them, Timisgām, ending the first stage from Khalsī.

The next day's journey began by the route leading us up a branch of that valley, past some patches of cultivated ground, supporting each its own hamlet, into a narrow dry gulley between rounded hill-surfaces, up which we rose until we came out upon another such neck as we were on the day before. Again there crosses at right angles to the road a ravine which we have to go down into and up again by a zigzag path that gives us several hundred feet of fall and rise. Then a gradual descent brings us to Himis Shukpā, a noted place. This place is named after a grove of a hundred or two large shukpā, or pencil-cedar, trees which there grow about a stony mound. The girth of several of these trees is six or seven feet, and some that have irregular trunks measure 10 feet and more; they taper quickly upwards, reaching to a height of about 40 feet; it is a holy grove protected by the gods; disease and misfortune are said to overtake those who commit sacrilege against it. At Himis Shukpā are remains of a fort or tower, which was built by the Sokpos who invaded Ladākh towards the end of the seventeenth century; I was told that they built such towers in many places, and that this was the most westerly of them; its walls are of a kind of gravel or concrete moulded.

From Himis Shukpā we go up over another neck of gravelly ground, and down to another ravine; the waters of this support the village called Yangthang, or "New Plain." This was settled five-and-twenty years ago by a Lāmā, who, by his wisdom and good management, got the main watercourse made, and, having established cultivation, fixed a monastery in the valley, in which there are now seventy Lāmās. The land, which, by grant, is free of Government dues, is cultivated by labourers who receive their food and clothing from the monastery. Two more plateaus, separated by a ravine, making five in this march, had to be crossed before Tarūtse, which we made the halting-place, was reached.

The next day a few miles of sloping plain, similar to what we had crossed so much of, brought us to Bāzgo.

It must be understood that in these marches from Khalsī we were all along edging the lofty granite range that for such a long distance divides the valley of the Indus from that of its great tributary the Shāyok. For the greater part of the way spurs of it only were visible--rugged and bare, brown and yellow, hills, whose surface was much-disjointed rock; but sometimes the eye reached up the valleys to the lofty central ridge, still of the same character, or else, perhaps, touched with the white of some recent snowfall.

Bāzgo is a large village; as one looks down on it from the edge of the plateau it has a picturesque and strange look on account of the position of some of its buildings, as of the monastery, on the towering rock.

The two routes that had separated near Khalsī have again met here at Bāzgo. From that place the one road traverses a stony plain not very much above the level of the Indus. Nimū is passed, a large village at the inner edge of this plain. Again there intervenes a low line of hills between the Indus and the great range; but here there is no road at all by the river side, so steep is the cliff; we have therefore once more to leave the near neighbourhood of the river and go over more stony plateaus between the outer, low, line of hill and the high mountains. A rise of about 1200 feet up a narrow ravine, cut in the alluvial deposits, brought us to the plateau level, and we then found ourselves in the same desolate kind of country we had passed through before coming to Bāzgo. There was the stony plain, made up of granite detritus, and bounded by rocky mountains; on neither, for miles, was anything green visible; the near mountains—spurs jagged by weathering—were of many shades and tints of brown, the variations occurring sometimes in veins, sometimes in masses, and sometimes being due to a talus of blocks fallen from one particular coloured cliff; in the higher parts the hills were more of one sober brown colour, and of more regular lines of ridge.

Up one of the stony ravines is the village of Umla; but

it cannot be seen from the road. On our way we pass Thārū, a collection of eight or ten houses, with corresponding cultivation; then we cross the last of the plateaus, from which descending we reach a little garden planted by the roadside for the shelter of travellers, which is close to the village of Phayāng. Thence a few miles by the side of the river brought us to Pitak, the last village before Leh.

All the cultivated spots hitherto met with in Ladākh were watered from side-streams—streams coming almost immediately from the mountains with a more or less steep fall. But at Pitak the land is irrigated from the Indus itself. For we are here at the beginning of a part of the Indus Valley, where the bottom is wide and is occupied by a flat of alluvium, over which the waters of the main stream can be brought.

At Pitak there is an isolated rock a few hundred feet high, on which all the older buildings are situated. The monastery is on the summit at one end, and there is a fortification—of two towers connected by a double wall—that must have helped to make the rock a strong position. Formerly all the houses were, for protection's sake, built thus high up; this was very commonly the case throughout Ladākh, only in the last generation or so have the people taken generally to building in the plain.

We are now but five miles from Leh, the capital; it is indeed within sight from the summit of the rock; let us from here take a general view of the geographical position of that town.

The river is 10,500 feet above the sea; it is flowing with a gentle current in a flat, the surface of which is in great part of pebbles only, but here and there it is of such a fine alluvial soil that the people have been able to bring it under cultivation. On the south-west side this low flat is bordered by a stretch of sloping gravelly ground, consisting of a number of coalesced fans that have been deposited by streams having their origin in the mountains on the south—mountains which rise up to 20,000 feet. On the north-east of the river there continues the same great granite ridge, at the foot of which we have been passing; the summit of it is about 12 miles from the Indus, as the crow flies.

The line of ridge is from 18,000 to 19,000 feet high. The Passes through it are 17,000 and 18,000 feet.

A valley, coming down from this great central ridge, bounded close by rocky branch-ridges, at the distance of four miles from the river widens, the spurs of the hills both becoming lower and retreating aside, insomuch that there occurs an open space of the form nearly of an equilateral triangle, the side of it five miles in length. The town of Leh is at the apex of this triangle, where the valley begins to widen. Rocky hill-spurs form the sides, the river Indus the base, Pitak being at one end of the base.

This triangular space is not a level; it has a steady, gentle slope up from the river. Advancing from Pitak we rise, in the five or six miles, about 1000 feet, the altitude of the town of Leh being 11,500 feet. The lower part of the slope (of which the whole consists of a gravelly alluvial deposit) is dry and stony, but as we go on we come within the tract that the side-stream has been able to supply with irrigating water, and find a space of several hundred acres covered with crops.

Here, by the farther edge of this cultivated space, on one of the branch spurs from the hills and spreading on to the plain in front of it, is built the town of Leh. The most conspicuous object in it is the palace of the former rulers, an edifice boldly built up to the height of eight or ten stories from the shoulder of the spur; a slight in-leaning of the massive walls gives it a great look of strength. Higher up, on the same rocky ridge, are the monastery and the towers of an old fortification. Below, in front of the palace, houses cover the slope. On the flat beneath is the newer part of the town. Entering from the direction of Kashmir we pass through a small gateway and find ourselves in a long, wide, and straight bazaar, the houses regularly built and uniformly whitewashed. This has been erected since the Dogrās took the country, and is now the place that is most frequented. At the farther end of this bazaar one passes into the old part of the town, among houses separated by narrow winding passages. As one rises on to the slope of the hill one meets with a few houses of a

higher class; these were built by the Kahlons, or ministers of the former sovereigns, and now for the most part belong to their representatives.

Outside the city are several gardens, or what are here so called; in truth they are plantations of willow and of poplar. These plantations are extremely useful, both for their grateful shade—which is the first thing a traveller will look for in these parts in summer time—and as a reserve of building-timber, a thing in Laḍākh extremely scarce. On the east of the town the mountains are near and there is no cultivation; but to the west, the whole width of the valley, about three-quarters of a mile, is of cultivated land, descending in terraces, with small hamlets scattered over it.

CHAPTER XII.

LADĀKH: THE INHABITANTS.

LADĀKHĪS — CHĀMPĀS — COLONIES IN LADĀKH — MODE OF LIVELIHOOD — POSITION OF THE WOMEN — CERTAIN CUSTOMS — MONASTERIES AND LĀMĀS.

OF the four races of men who inhabit the country on the north-east of the main chain of mountains—the country which drains into the Indus—whose names are Chāmpā, Ladākhī, Baltī, and Dārd, the first three belong to the Tibetan race. People of this Tibetan race extend over an enormous extent of high ground at the back of the Himalayas, from the borders of China proper to the territories we are dealing with. We are here, in Ladākh and Baltistān, at the most north-westerly spots occupied by them.

The first of the three subdivisions of Tibetans—the Chāmpās—are those who lead a nomadic life on the upland valleys, places which, being too elevated for cultivation to bring a living, are fit only for pastoral uses. The second, the Ladākhīs, are those Tibetans who have settled in the valley, and in the side valleys, of the Indus; who have formed villages and have occupied nearly all the ground fit for cultivation; and who still retain the Buddhist faith which is held by the Tibetans to the south-east and east. Thirdly, the Baltīs are that branch of the Tibetan race, who, at one time identical with the Ladākhīs, spread farther down the Indus Valley and then became converted to the Muhammadan faith.* Deferring our say about the Baltīs until we come to describe the region they inhabit, we will in this chapter look at the characteristics of the other two branches, the inhabitants of Ladākh both settled and wandering, and will tell something as to their mode of life.

* The geographical distribution of these races is clearly expressed on the Race Map.

LADĀKHIS.

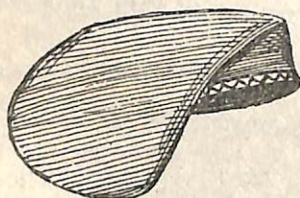
The Ladākhīs have the Turanian cast of feature—that which we are apt to call Chinese, from our having become most familiar with it through the Chinese division of the Turanian family. They have it not perhaps in its greatest intensity, but still unmistakably. The cheek-bones are high; from them downwards the face rapidly narrows; the chin is small and usually retreats. The most persistent peculiarity is that of the eyes, of which the outer corners are drawn out and the upper eyelids are overhung by a fold of the skin above. The eyes are brown in colour. The nose is pressed, so to say, into the face; and it is often, but not always, depressed at the bridge. The mouth is large and inexpressive; the lips project, but are not thick. The hair, which is black, is cut quite close in front and at the sides of the head; behind, it is collected into a plait or pigtail, which reaches about to the small of the back. Moustaches are always or nearly always present, but they are small, and the beard is very scant.

In stature the Ladākhīs are short, several inches below the English middle height. Cunningham gives nearly 5 feet 2 inches as the height of the men and 4 feet 9¼ inches as that of the women. Both sexes are broad-made and strong. There is no doubt that they are an ugly race; their best friends cannot deny it. As to the women, the best that can be said of their looks is that some of the younger ones are "not so bad looking."

One is glad, on coming to the subject of their character, to find more to be praised. The Ladākhīs are cheerful, willing, and good-tempered; they are very ready for a laugh; they are not quarrelsome, unless it be when excited by their intoxicating drink, *chang*, and if over that they do get to wrangling or fighting, no bad blood remains afterwards. They are by no means ingenious; simplicity and clumsiness are characteristics of them. There could hardly be two national characters more opposed than those of the Ladākhīs and the Kashmīrīs; these latter, quick, versatile, and plausible; the others slow, inapt,

and much given to truth-telling. The Ladākhīs, however, have by no means poor understandings; they are not muddle-headed, but will learn to understand clearly if given a fair time and opportunity. Major Godwin-Austen has with truth remarked that in one respect the Ladākhī writers far excel the munshīs, or writers, of India—that is, in the understanding of a map.

Their dress is simple; it is all woollen, of a coarse and thick, but not very closely-woven, home-made cloth, of a natural drab colour. The men wear a *choga*, or wide and long coat, folded over double in front, and confined at the waist by a woollen kamarband, or scarf. They wear nothing beneath this; with boots and cap, and may be an extra wrapper, their attire is complete. As to cap, there is an old and a new fashion. The old sort of cap, still a great deal worn, but chiefly in those parts that are out of the way of traffic from foreign countries, is of the peculiar form shown in the cut. The part that falls over, as far as I could make out, does no good to the wearer. The Kashmīrīs have an absurd story about these caps, that their origin was from the time when a force of Mughal soldiers from Kashmir, under Ibrāhīm Khān, came to help the Ladākh ruler against the Sokpo invaders. When this force was retiring, one of the troopers dropped his horse's *tobrā*, or nose-bag, which a Ladākhī, picking it up, wore for a cap; and the fashion was so much admired that it became general. The other sorts of head-dress are a jaunty skull-cap, which is the newer fashion, and a comfortable lamb-skin cap, with large ear-flaps, which in summer are stuck up behind in a curious way, but in winter they make the best possible protection against the severe cold. To the Ladākhī his boots are a matter of great importance. The stony ground, and in winter the biting snow, require precautions. A piece of thick leather makes the sole, and is moulded round for the sides of the feet as well; a felt or a cloth top is joined on to



LADĀKHĪ CAP.

this, to reach above the ankle; the leg is further protected by felt gaiters, secured by a tape wound many times round. This *chaussure* is good against cold, and is not bad for rock-climbing where the ground is dry.

The women wear a gown the skirt somewhat gathered into plaits, of vertical strips of woollen cloth, generally blue and red alternately but sometimes patterned, sewn together. Over the shoulders is worn a kind of shawl, of sheepskin with the wool inside. For head-dress they have only a strip of cloth, ornamented with shells or with rough turquoises, from the forehead back over the middle of the head, and lappets of cloth edged with fur over the ears, but under the hair. They wear the same sort of shoes as the men. The dress of neither men nor women varies with the season of the year.

The only division of the Ladākhīs—the only caste division—is that the blacksmiths and the musicians belong to castes which are considered low; the blacksmith caste, I believe, being thought the lowest of all. These low castes are called *Bem;* with none of them will the ordinary Ladākhī intermarry.

The priesthood of Lāmās does not make a caste; the office is not hereditary.

Chāmpās.

The Chāmpās inhabit the higher country—the valley of the Indus above the villages, the other plains, or flat-bottomed valleys, of Rupshu, and a few outlying places.

They are not very different from the Ladākhīs. Their different occupation would be sure to produce some changes; or rather, it should be said, probably, that the settled life of the inhabitants of the villages had changed these last from what their ancestors were, who lived the nomad life, and who now are represented by the Chāmpās. For it is likely that the course of events was this—that of the Tibetans, spreading north-westward, some reached a country they were able to settle in and to cultivate, while some remained in the higher parts, and kept to their pastoral ways. The difference in the face that struck me was that the Chāmpās have rather a projecting chin, while the

Ladākhīs, as before said, have a receding one; the Chāmpās, again, have a more expressive mouth. They are a most hardy and a most cheerful set of people. Living all their lives in a severely cold climate, and getting a scanty subsistence, they still have the best of spirits. When, after a day's journey, they collect round the scanty fire that is warming their evening meal, their merry laughter shows what a good heart they can keep in what, to strangers, seem to be the hardest of circumstances. Their lives are spent in tents; they stay for a month or two at a time in one spot, to graze their flocks and herds, and then they move with them whither the advancing season promises better pasture. Some few details of their way of living will be given when we come to describe the country itself which they frequent.

The dress of the Chāmpās is almost the same as that of the Ladākhīs, only that some of them wear the long wide coat of lamb-skin, instead of woollen cloth.

As a rule, the Chāmpās and Ladākhīs do not intermarry. The religion of the two is the same, but it lies light on the Chāmpās. Their young men do not become Lāmās. The number of these Chāmpās within this territory is very small; there are hardly more than a hundred families of them. Ethnologically they are not different from those who inhabit the next tracts to the south-east—country which is under the Government of Lhāsa.

COLONIES IN LADĀKH.

There are some families who come and go with the summer, and a very few who have settled, of a race called *Khamba*. They are of the country named Kham, far to the east of Lhāsa. By what road they first came from their own country I know not, but now they reach the districts of Zānskār and Rupshu from, strange to say, the side of India. They are of Tibetan race, and their language, though different from that of our Chāmpās, still can be understood by them. The Khamba are professional beggars, of a very vagrant disposition; they wander about some part of India in the cold months, and find their way up here in the summer, subsisting by begging. It is strange that they should come to such

a poor country as the higher parts of Ladākh for the exercise of their calling; but the Bhots, though poor, are charitable. These Khambas, too, give themselves a religious air, as do most beggars in the East, and that may help them. But in truth, in their ways, they are more like to the gipsies than to devotees. They have their wives and children with them, and these all come round in succession to beg, as if independent of each other. They live in the smallest of tents; these are only just high enough for one to seat oneself on the floor beneath them. The tent and their other traps are carried on the backs of a few of the load-carrying goats which they always possess. The Maharaja's authorities have tried to persuade some of these Khamba to take to agriculture, and a bit of land has been given for this object by the Pāngkong Lake. I saw one family there, who had commenced to till, and had left off their inveterate habit of begging; but they were still in tents, and had not begun to build a house.

The next colonizers to be mentioned are *Baltīs*. This race of Baltīs will be more fully spoken of in the chapter which treats of their own country, Baltistān; here I will only name their settlements in Ladākh. In the first place, there are Baltīs inhabiting the valleys of Drās and Surū, and the tract about Pāskim, which is called Purik. These are not geographically separated from the main body of their countrymen in Baltistān, which district borders on Drās; but they have some slight differences. Then there is an isolated colony of Baltīs right in the middle of the Bhot country, only a few miles from Leh. The largest tract of cultivated land in Ladākh is in great part held by them; this is at a place called Chushot, on the left bank of the Indus, from five to ten miles from Leh. These immigrant Baltīs came four or five generations back, some from Purik and some from Skārdū.

Dārds are found in Drās and in several places along the valley of the Drās River, and again in a few villages in the valley of the Indus, being there interpolated between the Baltīs and the Ladākhīs. It is at these last places that some Buddhist Dārds occur; these make small and very much isolated communities.

There are some ethnological facts connected with them, which are of great interest; these will be given in one of the chapters on Dārdistān (Chap. XVIII.).

In the town of Leh are a good many families of *half-castes*, born of Bhot women, the fathers being merchants of different races who have frequented the market at that place. There has for long been a commercial connection between Leh and Kashmir, and families of Kashmir merchants have settled in Leh. There is now, and probably there has been for generations, a hybrid class, brought into being by the intermarriage of these Kashmīrī with women of the country, who have been and are ready to turn Muhammadan—or to any other religion—in order to marry. Again, the Turkī merchants, from the direction of Yārkand, are responsible for another set of half-castes. A third class has sprung into existence since the conquest of Ladākh by the Dogrās, from the connection of Dogrā sepoys with Ladākhī women. These are, or were, called *Ghulāmzādas*, that is to say, "slave-born."* The theory was that, being born out of wedlock, they belonged to Government; this theory was so far carried into practice that they used to receive their daily bread from Government, and to give, unwillingly, their labour in return, in such work as wool-cleaning.† They were, indeed, bondmen, unable to leave their country or to get their living in it in their own way Some years ago an attempt was made to get them to settle on a bit of land lately enclosed, and to follow agriculture; but their want of skill, as well as want of capital, made this to fail. When I was at Leh, in 1871, I was enabled, by orders from the Maharaja, to set them free to go where they pleased. They had diminished to quite a small number; they were all ready to sacrifice the Government daily ration for the sake of liberty. Before manumitting them I ascertained that there was a prospect for each of them of a living to be got, and I hope that by this time they are absorbed in the general population.

* The two former half-caste breeds are called "Arghaun."

† A great deal of hand labour of a light sort is required in picking the pashm or underwool of the shawl-goats free from hair before it is sent d- , to Kashmir.

The result of the crossing of breeds, in each of these three cases, cannot be said to be good. The half-castes are for the most part thoroughly untrustworthy, and in other respects they are of worse character than either of the races they spring from. This is probably due—and I think the remark may have a wider application than to the small communities here, may apply to the mixed breeds of many other countries—to the want of family ties and of the training in social habits of which children of almost every race get something in the ordinary course of things, but which is broken through when unusual connections are made. An exception to be made from the above general statement of their low moral state—that of some respectable families of the Kashmīrī half-castes—in some measure corroborates what has just been said, insomuch that these have for some generations formed a community of settled habits and have again acquired a standard of morals of which the miscellaneous half-castes seem quite devoid.

MODE OF LIVELIHOOD.

Almost all the Ladākhīs are engaged in agriculture; the number of artisans is very small indeed, and of shopkeepers of that race there are hardly any; the shopkeepers of the town of Leh—the only town in the whole country—are either of the half-castes or are strangers. Thus the greater part of the population of Ladākh are connected with the soil. They form a peasantry tilling their own land. The area cultivated by one family is from two to four acres. From the produce of this, and from the incomings of miscellaneous labour which they undertake, they manage to pay the Government demand and to get for themselves a fair living. The sons of a family neither divide the heritage nor themselves separate, but they enjoy the estate in common, in one household; the domestic institution which is necessarily connected with this arrangement will be spoken of farther on. The people of rank also have their interest in the soil; some have grants of land free, or to a certain extent free, of the Government land-tax; others have land bearing

that burden which they are able to make some profit out of by employing labourers.

The grain which is most prolific and which is grown to the greatest extent is grim, or loose-grained barley, and it is the meal of this grain that the Ladākhīs mostly eat. Grim is a hardy plant; it is cultivated even at the height of 15,000 feet; this height indeed is exceptional; there is only one place at that altitude where it grows, about twelve acres being there sown with it; but at 13,700 and 14,000 feet there are villages dependent on its cultivation. At lower levels, besides the grim, wheat is grown. But little of this is consumed by the Ladākhīs themselves; they grow it for the market, for the use of the people of the town and of the travelling merchants. Wheat does well up to 11,500 feet; it is cultivated, but with less success, even at 12,800 feet. Peas, and barley (of the kind common in other countries) are crops that grow at almost as great heights as any. This barley is given to horses. In the lower parts of Ladākh—from 10,500 or 10,000 feet downwards—two crops can be got off the same land. I think that barley or grim is, commonly, the first and millet the second crop. Rice does not grow in Ladākh. Maize has been tried in a garden without much success; the ears of it which I saw were only four inches long.

Every crop, as has been said, requires irrigation for its growth; several times has the land to be watered to bring on the plant. In the middle of Ladākh, if there be a sufficient supply of water, the crop is secure; there sunshine never fails for the ripening of it. In Zānskār, however, which is near the most snowy range, and in some of the very high parts, there is sometimes a failure of the sun-warmth necessary to ripen the grain.

Ploughing is done chiefly with the hybrid of the yāk bull and the common cow; this they call *zo* if male and *zomo* if female. The yāk itself is not good for the plough.* The corn is sometimes reaped with a sickle, sometimes pulled up by the roots from the loose soil.

* The yāk, however, is very useful for carrying burdens. The Ladākhīs earn a good deal as carriers of merchants' goods with their yāks, their zos, and their ponies.

The universal food of the people is barley-meal, made from grim; it is either made into a broth and drunk warm, or else into a sort of dough and eaten with butter-milk if that can be got. They generally have three meals; one an hour or two after sunrise, of the barley-broth; one at mid-day, of the dough; a third after sunset, of the broth again. In this way they consume some two pounds' weight of meal a day. To the broth they put any addition they can get; sometimes it is vegetable, sometimes meat, and sometimes tea.

Unlike the natives of India, the Ladākhīs are not particular as to their feeding. They obey few restrictions as to what to eat or how to eat it, or as to the method of slaughtering. One way they have of killing an animal for food is to tie up the mouth and let it be suffocated. Another practice of theirs (I am not sure that it is common) is to drain the blood of the animal into their broth and warm all up together.

The drink of the Ladākhīs is *chang*, a light beer made without hops.* They have no good vessels to keep it in, so it usually is sour by the time it is drunk. As I have drunk it, it tasted like a cross between home-brewed beer and farmhouse cider; it is not a bad beverage on a warm day, but these people will enjoy it in the depth of a severe winter. There is also a spirit sometimes made—a whisky, but this is proscribed by law. Through the Maharaja's territories generally the making and the drinking of intoxicating liquors is forbidden †; at one time an order was made that in accordance with this rule the drinking of chang should be put down; but on the representations of the Ladākhīs that it had been the beverage of their nation from time immemorial, and that it would be impossible to endure the cold of their climate without it, they were allowed the malt-liquor; the restriction as to the spirit however remains. Tea is another favourite drink in this country, but the poor people—that is nearly all the population—seldom are able to afford it; it is made in a churn, with butter added.

* For the better brews a plant brought from Baltistān is used in the same way and with somewhat the same effects as are hops in our beer.

† Christians are specially exempted from the operation of this law.

With such food and drink as has been described the Ladākhīs are one of the hardiest of races. As coolis, for carrying loads, they are admirable—not only the men but the women too. I have had women employed to carry my baggage, according to the custom of the country, who have done twenty-three or twenty-four miles with sixty pounds on their back, and have come in at the end singing cheerfully. Against cold, too, they are very strong. Not that they equal in this respect the Chāmpās, who live at still greater heights, and can hardly bear to be as low down as 11,000 feet. Still the people of Central Ladākh and of Zānskār are very hardy in this respect also; on a frosty night, with nothing but the clothes they go in, they will coil themselves up and sleep comfortably on the bare stony ground. All have a rooted objection to washing. I was told that there was a custom of bathing once a year, but I could never get any satisfactory corroboration of the report. Their clothes, worn next them, are never washed, but are affectionately kept around them until they fall to pieces.

Of the wants rife in a barren country like Ladākh, there are two which (perhaps without, or at all events in addition to, other difficulties) seem to make impossible either any great addition to the population or increase of their comforts. These are want of fuel and want of timber. For fuel the dung of cattle is carefully stored. This is supplemented in some parts by a bush which they pull from the hills that they call *burtse* (Eurotia). This plant is indeed a great resource for travellers in out-of-the-way parts; it is a small low-growing bush, the woody underground stem of which makes a good fuel. Then, in the high valleys, there is a plant like our furze, called *dāma*. On some hill-sides there is the pencil-cedar, a strong-burning wood; and lastly, in certain ravines, there is willow growing wild. All these, however, from their distance, require much labour to collect; they are seldom used by the Ladākhīs in their own houses, but are chiefly got by them for travellers and for the town consumption. The timber-trees are willow and poplar. These are planted either along the watercourses between

the fields, or now and then in separate plantations. But the growth is not enough to supply all that is wanted. When the new bazaar at Leh was built, a great old plantation belonging to the chief monastery was felled for the purpose, nothing approaching to which is now to be seen in the country. The difficulty in the way of plantations seems to be that there is required for them positions advantageous in point of soil and water which are already occupied by crops; one can hardly increase the growth of timber without diminishing the breadth of land tilled, and of that there is none too much.

The houses are built of sun-dried bricks or of stone. They are flat-roofed, of two or three stories, but these all very low. Except in the very poorest houses there is always a reception room kept neat and clean, the rest not having this character. When a visitor comes they carpet this room with felts, and do all they can to make him and his attendants comfortable. The houses are all whitewashed, the aspect of them—perhaps among groups of trees, or else standing out in relief from the sombre rock on which they may be built, rising one behind the other on the face of it—with their verandah-rooms or with balconies projecting, is often bright and pleasant. The houses of people of the higher ranks have an oratory for the practice of the Buddhist religious ceremonies. The palace at Leh is probably the finest building in the country, though some of the monasteries may approach it. This palace is curiously contrived. The arrangement of the rooms is very irregular; they are not in continuous stories, but are at all sorts of levels, connected by narrow and low passages. There are two or three large reception rooms, some of them with an opening to the sky in the centre, this plan allowing of a large fire burning in winter on the floor of the room. The roofs of these large rooms were supported by columns with the wide-extending head or capital which is so marked a feature in Indian architecture; the columns, and indeed most of the woodwork, were gaily coloured, and on the walls were painted sacred pictures.

POSITION OF THE WOMEN.

To a native of India the complete social liberty of the women of Ladākh seems very strange. This liberty, I think it may be said, is as great as that of workmen's wives in England; not only do Lādakhī women go about unveiled, but also they mix where men frequent and enter with them into their pursuits of business or pleasure, and partake too of their toil. I have told what good weight-carriers the women are; in agriculture also they take their share of the work; when the seed is in, the tending of the fields—the watering and so on—is a great deal left to the women, the men perhaps having work abroad.

Thus far we may think woman's position here to be better than in India, but what is next to tell darkens the picture. Polyandry, plurality of husbands, is, except among the few richer people, quite general; it is much more nearly universal than is polygamy in India, and for this reason, that polygamy is a custom itself expensive, practically reserved for the well-to-do, while polyandry is an economical arrangement, one established on the poverty of a barren country, and extending throughout the people as far as indigence itself does.

There can be no doubt that the practice of polyandry in Ladākh originated from the smallness of the extent of land that could be tilled and the general inelasticity of the country's resources, while the isolation from the rest of the world—isolation of manners, language, and religion, as well as geographical isolation—hindered emigration. It was found impossible for the younger ones either to marry and settle or to go out for their living. They naturally became mere helpers in the household—farm-servants to the elder brother. From that there came about the curious custom that when the elder brother marries a wife she becomes a wife to all the brothers. The younger brothers remain in a very subordinate position in the family, but the wife is held in common. The children recognize all as father, speaking of their elder and their younger fathers. As many as four brothers thus may become, and do become, husbands to the same wife; I

believe there is no limit at all, but of as many as this I have known instances.

In addition to this form of polyandry, which, as I have shown, stands on economical grounds, there is, strange to say, liberty for the women to choose yet another husband from a different family, a stranger. I have known cases where there were two—and, if my recollection does not deceive me, three—brothers, husbands to a woman, yet she took a fourth husband from outside.

The effect of all this in keeping down the population of the country is very great. Not only are fewer families founded than would be otherwise, but the families are smaller. In spite of the restricted area of cultivation, which it would not be easy to extend, though possible in a few cases, and in spite of there being no importation of grain—except of a small quantity of rice, which is an expensive luxury—the population of Ladākh, though fairly well filled up, is not redundant. Each person has his own position in connection with the land, and it would be impossible to take many away without throwing some of it out of cultivation.

It seems to me that such a balance is preserved in this way:—The system of polyandry probably would have the effect, if it were fully carried out, of absolutely lessening the population. When it does positively act in that way, when from that cause some holdings of land are, so to say, going begging, then more of simple marriages take place. An heiress of a few acres, say, gets a single husband whom she brings home; or an only son has a wife all to himself. Then the natural increase of population recommences, and the balance is redressed.

I could get no satisfactory answer to the inquiry I made of many—what becomes of the surplus of women which must, one would think, be caused by the custom? I did not learn that there were many old maids, and the number of nuns is less than the number of young men that have been drafted off to become monks. It is possible that polyandry alters the proportion of sexes in the children born—lessens the number of females; but this is hypothetical; I could not get statistics to throw light on the subject.

Among a rough people like the Bhots it is difficult to say what would naturally be the character of the women; that is, what it would be if they had the same liberty of ordinary social intercourse which they now possess, but held to the rule of one woman to one man. I incline to think that polyandry has a bad effect on their natures; that, beyond the openness which one admires, it makes them over-bold, shameless, and causes them to be in a general way coarser than their other circumstances need make them. And to the same custom I attribute the greater facileness, as compared with neighbouring countries, with which those connections with foreigners are formed that have resulted in so many varieties of half-castes at Leh.

CERTAIN CUSTOMS.

There is a rather curious custom of the father and mother of a grown-up family retiring from active life and its responsibilities at a time when they may not be much beyond middle-age. When the son is married and has a child then the time has come for the grandfather and grandmother to leave their home, to give up the house and the land to their son. They go into a very small house near, taking only one or two head of cattle, and retaining just enough land for themselves to attend to and raise grain from for their food. After this is done they have no more claim on the son, who becomes legal owner of the family property. There is often a house attached to a holding which is put to this very use. The amount of land to be given over is regulated by custom; this, on the death of the old people, comes back to the estate. If there be *two fathers* alive they are both got rid of and provided for in this way.

In the disposal of their dead the Bhots follow the Hindū custom of burning. But whereas the Hindūs seldom or never let twenty-four hours elapse between death and cremation, these Bhots keep the corpse for many days, feasting their friends round it; the higher in rank the deceased man was, the longer they keep him from the dissolution of fire.

It would hardly be looked for that of these Bhots a considerable number should be able to read and write; but it is the case that a far larger proportion than among their neighbours—the Kashmīrīs for instance, to say nothing of the Baltīs and the Dārds—have these accomplishments. A predisposing cause to this doubtless is the length of time, during the winter, when agricultural work is stopped and occasion for indoor pursuits arises. Probably the practice of one son out of each family commonly being set apart to become a Lāmā has distinctly aided the progress of this elementary education. In almost every village there are some who can write freely and accurately.

There are certain traits of manners in a people that a traveller is very likely to miss altogether, that one only occasionally—when some unusual event brings them to view—has an opportunity of observing. Such an event was my own coming to Leh in 1871. I had visited the place before when examining into the mineral resources of the country; but that year I came to take up the Governorship of Ladākh, to which the Maharaja had appointed me. Thus I was able to observe the way in which these people receive those to whom they wish to do honour. People of all classes turned out at every inhabited place we came near. The villagers collect at the entrance of the village, with the musicians in attendance playing on flageolet and tom-tom. The women in their brightest petticoats and gayest ornaments are drawn up in line, each holding a vessel containing either barley-meal, or milk, or chang, or some other thing to eat or to drink. But these offerings are not intended to be taken as provision; they are not as the *dālīs* in India, where a very substantial amount of eatables is often given; here they are tokens merely. Lastly, some of the women carry earthen vessels in which burn chips of pencil-cedar, whose perfume is counted holy and pure. As one comes up, all place their vessels on the ground, and make profound and not undignified bows. At each village in succession that we passed through for some six days' march was this repeated. At one part of the journey we passed at a distance of a mile or two from a large monastery. A deputation of Lāmās came down to the road

to receive me. Besides these, a band of eight red-gowned monks stood on a rocky spur above and gave a loud welcome with their music. Two played on flageolets; two bore cymbals; other two had drums mounted on standards and held up on high, where long curved iron drum-sticks reached to beat them; and the last pair played on long horns, which, too heavy to be held in hand, rested their curved ends on the ground. With this power of sound the eight made wild music among the mountains; the horns droned in a way melancholy and touching, but this strain was relieved by the clashing of the cymbals and the bold sound of the drums, while, through all, the flageolets brought out a more definite melody. At Leh itself all the population came out either to meet us or to see the crowd that met us. The hundreds of Ladākhīs —for numbers that are reckoned by hundreds make an unusual concourse in these thinly-peopled parts—the men of the numerous other races that collect at Leh, the eagerness of all to see me, and their respectful salutations of welcome, made, with the scene of the strange-looking town, with its edging of green gardens and cornfields, surrounded close by rocky hills, with lofty mountains in the farther view around, in the brightness and freshness of summer morn, a scene which I recall with pleasure—with pleasure more unmixed than that which a like assemblage gave me on the later day when with regret I said farewell to Leh, to the Ladākhīs I had for a time ruled over, and to the men I had worked with—a lowering winter's day that not in vain threatened snow—as they accompanied me for some miles down the road on my first march towards home.

MONASTERIES AND LĀMAS.

In nearly every village, in some parts of Ladākh in every village, is a monastery of greater or less importance; it sometimes holds but one or two Lāmās or monks, sometimes it is the home of hundreds. The monasteries are the most conspicuous buildings in the country; they are always somewhat apart from the houses of the village; they are often situated in high places difficult of access—on a spur of the mountain or on an isolated

rock, or they may lie in a nook, under the shelter of a lofty cliff. At the entrance of a monastery are fixed prayer-cylinders; sometimes a courtyard is fitted with them on all sides. These are cylinders with a vertical axis, turning on a pivot; they are furnished inside with a paper on which holy names are written; the making of these revolve is reckoned an act of devotion. In the case of the larger, heavy, cylinders, it is helped by rings being attached, which enable the devotee to give a good impetus to his prayer.* Past these one enters into the image-room; this is generally a fine lofty square chamber, the centre-space of which is supported by columns of wood. Here are kept the images to be adored; images of some of their gods, or of Buddha, or of apotheosised Lāmās. These are sometimes in metal, gilt, sometimes in clay gaudily painted. Often the artist has been successful in giving an expression to the face that well suits the character represented, as for instance the ineffable calm—a calm that, were it less unmoved, would almost express contempt for everything around—on the countenance of Buddha, or Sākya Thubba as he is called, the founder of the religion, whose devotion was continual contemplation of, and whose ideal was absorption in, the divinity. The room is furnished with numerous instruments of worship; with bells and lamps, and sceptres and other emblems, with bags of grain and with bowls of butter—these last sustaining a wick which constantly burns. It is hung with banners finely worked in curious devices, and often the walls are adorned with paintings. The Lāmās periodically assemble in the image-room to worship with prayers and sacrifices, as of grain, and with music. The people occasionally pass in and bow, and mutter a prayer before some of the images. No women, I understood, not even nuns attached to the institution, enter the image-room; they stand and worship at the doorway. This is the more strange as the Lāmās are not at all

* These prayer-cylinders are sometimes kept in continual motion by water-power. In a monastery in Nubrā I saw a cylinder, 4 feet in diameter and 6 feet in height, which was made to revolve by a stream of water flowing beneath the floor of the room against floats attached to a continuation of its upright axle.

jealous of strangers entering any part of the building, which point of liberality surprises one after meeting with so much exclusiveness in this respect as one does from the different religionists of India.

In any large family one of the boys was sure to become a Lāmā. First, from an early age, the boy is made a pupil at one of the monasteries; from there he goes to Lhāsa to finish his studies and to be ordained. Latterly boys have not taken so freely to the profession; it seems as if the life of mixed labour, study, meditation, and idleness has less charms for the young than it used to have; or, may be, employment in secular walks is more easy to get. When I was in Ladākh the chief Lāmās were fearing that the supply would fail. In a monastery there are two head Lāmās; one the leader in spiritual matters, the other the manager of its temporal affairs. I had a great deal to do with the *chagzot*, as this latter dignitary is called, of several of the larger monasteries. I found them to be men of genial and amiable disposition, of refined and dignified manners. Some of the *chagzot* had good business powers; to certain of them was entrusted the administration of a small district around their monasteries; the duties of this office most of them performed in such a way as both to satisfy the authorities above them and to keep the people in good heart. The dress of the Lāmās is the woollen gown or *choga*, dyed either red or yellow according to the sect they belong to; the red sect much predominates in Ladākh. They shave their heads, and most of them go without a covering; those of higher rank wear hats of various designs; some have very wide-brimmed red hats made of stiffened felt. Lāmās very commonly carry in their hands a small prayer-cylinder, constructed so as to turn on its handle by the force given to a bullet attached to it by a little chain; the turning of this is equivalent for them to saying one's prayers or telling one's beads.

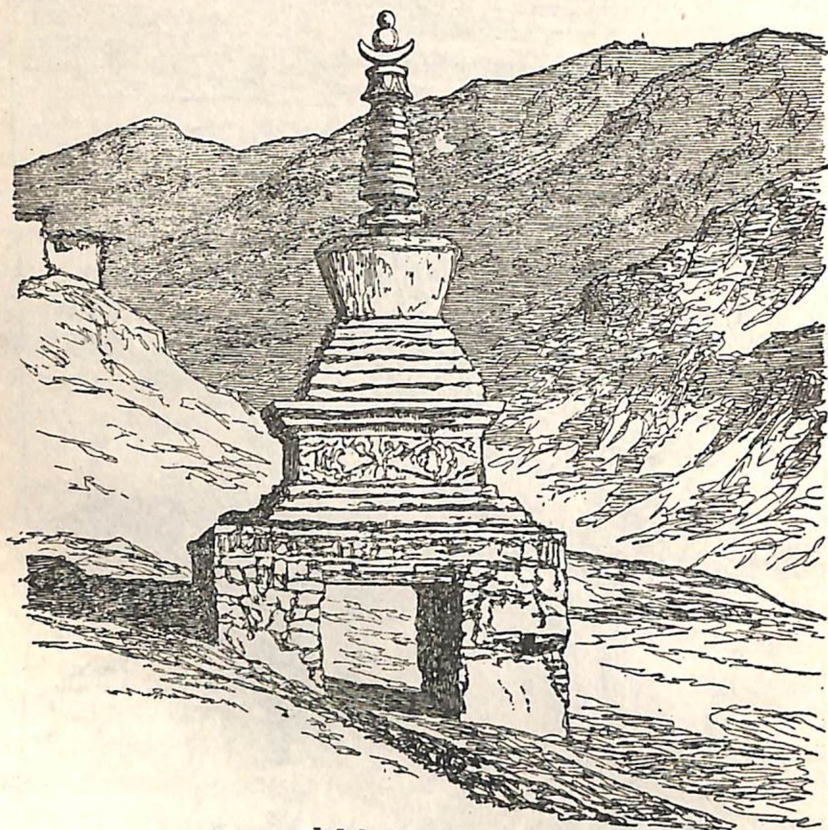
Some of the monasteries are endowed, some, I think, get help from Lhāsa, but the greater part depend on the alms given them by the villagers. At harvest time the Lāmās receive from the



FIGURE OF CHAMBA, CUT IN THE ROCK; NEAR SĀNKHO.

peasantry a goodly, though unfixed, portion of their produce. The monks, in their turn, are always both free in their hospitality to travellers and ready to identify themselves in interests with the villagers.

Besides the monasteries, one is everywhere in Ladākh meeting



KĀGĀNĪ, LĀMĀYŪRŪ.

with signs of the people's thought for their religion. In a few places are to be seen colossal figures carved in the rock, that represent some god. The sketch, p. 257, is of one of these, over 25 feet high, which stands for Chamba; this is to be seen in a valley near Sānkho, above Kargil; it is deeply cut in a schistose rock. But much more general are the long and thick built-up

stone-heaps or walls, covered with thousands of flat stones bearing a holy inscription. These (which are called Mānī) one sees at every village, and often also by the roadside where there is no habitation or other sign of man. The path divides and goes on both sides the wall, that the passenger may, going by, always keep it on his right. Then by the larger villages, or in the neighbourhood of the more influential monasteries, one is sure to find some edifices allied in character to the one shown in the drawing on the preceding page. They are carefully constructed of brick, plastered over, and painted. This drawing represents what is called a *kāgānī;* it is placed at the entrance to villages and to houses, the way being led beneath it. Others, resembling this in the upper part, have a monumental purpose; these are called Churten. Another custom, whether connected or not with that of raising such edifices as these, or whether of earlier origin, I cannot say, is to build a cairn at the summit of every mountain pass, and crown it with the horns of the wild sheep, ibex, and other animals, a large collection of which often adorns the heap, while a few boughs rise from the centre, to which a flag is sometimes fastened, with, may be, a holy word or text imprinted on it.

CHAPTER XIII.

CENTRAL LADĀKH, NUBRĀ, AND ZĀNSKĀR.

MOUNTAIN CHAINS OF LADĀKH — CENTRAL LADĀKH — ROAD FROM LEH TO NUBRĀ — NUBRĀ — ZĀNSKĀR.

From the preceding chapters the reader will have obtained both a general idea of the aspect that Ladākh presents, and an acquaintance with its inhabitants. In the present and the next two chapters, most parts of the country will be visited, and such details of them observed by me as seem worth telling will be described. But previously, I desire to give a short sketch of the mountain ranges of Ladākh and the run of the valleys; after which, it may be hoped, what is said of any particular district will fall into its proper place, and not produce confusion in the reader's mind.

Mountain Chains of Ladākh.

In obtaining the general view which we wish for, a careful examination of both the General Map and the Snow Map will materially help; in the latter, attention should especially be paid to the figures that mark the altitude of certain points in the valleys.

Commencing with the north-east part of the map, we see, first, the high table-land of the Kuenlun Plains and Lingzhīthang—these two separated by a range of hills—the whole being surrounded by mountains. The plains are 16,000 and 17,000 feet high; the mountain chains around them reach to 20,000 and 21,000 feet; those which make the northern boundary are the Eastern Kuenlun Mountains.*

West of the high plateaus is a space occupied by a great range

* Mr. Hayward made the distinction between Eastern and Western Kuenlun. The valley of the Kārākāsh River (below Shādūla) divides the two.

of mountains, which is called both "Mustāgh" and "Kārākoram," or sometimes perhaps is called by both names, according to whether its western or its eastern portion is spoken of. This is what intervenes between the line of the Shāyok Valley and the upper part of the valley of the Yārkand River. It consists of great mountain ridges, and of valleys which are never more than two miles in width. In the eastern part the summits are of the same level as those last spoken of—20,000 and 21,000 feet; farther west they rise still higher; in the ridge that separates the Upper Shāyok (as it comes down from the north) from the Nubrā River, are great peaks 25,000 feet high, rising out of a ridge of 20,000 or 21,000 feet; and among the mountains that lie to the north-west of this are several summits of 25,000 and some even of 26,000 feet. In this range originate many and great glaciers. As to the valley-levels; the Snow Map will show the position of the 15,000 feet level in the Chāngchenmo Valley, and of that of 14,000 feet by Pāngkong. From these heights the descent along the Shāyok is not recorded till we come to Nubrā, where 10,000 feet is the altitude of the valley-bottom; thence there is a gradual fall to 9000 and 8000 feet, a little below which the Shāyok River meets the Indus.

Next is the space between the Shāyok and Indus valleys. The Indus Valley itself will be seen by the figures on the Snow Map to have a fall closely corresponding to that of the other. Between the two is a great ridge of mountains, which for convenience I will call the Leh Range. Of the summit of this, 19,000 and 20,000 feet is commonly the height, and the line is but little broken through; only down to 17,000 feet do gaps here and there exist.

Then comes the wide tract between the Indus Valley and the main watershed-range. Here is a mass of mountains whose ramifications are most complicated. As to height, we find the conspicuous summits varying from 20,000 down to 18,000 feet. In the south-eastern part are flat valleys at 15,000 feet; to the north-west there are a few wide openings at 10,000 or 11,000 feet, but on the whole the valleys are narrow; they fall, with various degrees of slope, to the level of the Indus.

Last is the watershed range itself. This makes another region of glaciers. Its summits for a long distance seem to average 20,000 and 21,000 feet, and the Passes through it are at very high levels. As we trace it north-westward we come to the Nun Kun Peaks, at which, coming from the other direction, the account of the range in Chapter IX. ended off.

We now enter on the more particular description of successive districts.

CENTRAL LADĀKH.

By this name is denoted about 100 miles in length of the Indus Valley, from the borders of Baltistān up to 30 miles or so beyond Leh. I have followed the valley upwards from the village of Sanācha, a place within Baltistān, from which, nevertheless, we will begin the description.*

In this part the bottom of the Indus Valley is a narrow rock-bound gorge. The river flows in it with an eddied but not uneven surface; its depth must be great to allow the body of water to pass along such a narrow channel, for I found that the width was in one place 65 feet and in another but 46 feet. The walls of this gorge are nearly vertical; above them rise other steep but more broken cliffs; above these the ground retires, but there are greater heights behind. All this is of granitic rock. Over this rocky ground the path is a difficult one; a laden horse cannot go along it, and with difficulty can an unladen pony be led. It is the same on both sides of the river. This difficulty of the road isolates the villages of this part of the valley, cuts them off greatly from intercourse, and it prevents the traffic between Ladākh and Baltistān from taking this route, which at first one would think to be its natural one. This, as it is the lowest, is also the warmest part of Ladākh. The level of the river is about 9000 feet, but even at this height the valley in summer time is hot. The unclouded sun heats the bare rocks that slope to meet its rays; the traveller, as he goes along the rugged way, exposes one side of him to the sun's direct rays and the other to a strong radiation

* Sanācha is on the left bank of the Indus; it bears N.E. by E. from Kargil.

from the ground, while the pent-up air itself becomes hot and gives no relief. But after a toilsome drag for some miles over this waste of heated rocks, he reaches one of the little villages that are made at the mouths of side ravines, if haply there can be found a few acres of flat ground for cultivation. These villages are to the traveller a most welcome and lovely sight; a space covered with crops of a brilliant green overshadowed by luxuriant fruit-trees in the midst of the barest rocks gives a relief equally to the eye, the mind, and the body of the wayfarer.

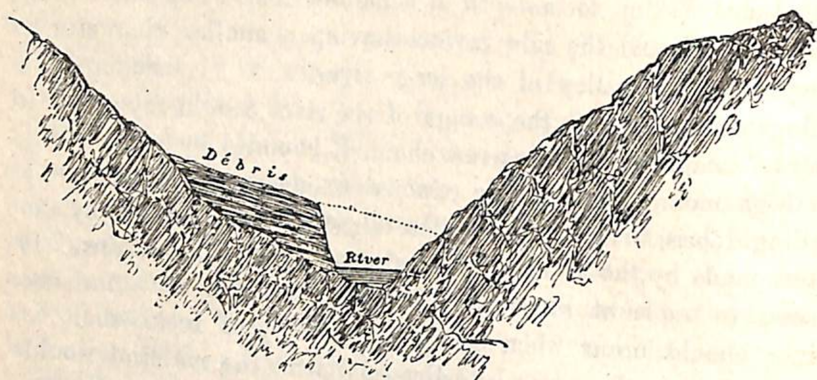
Garkon is the one of these villages most curious in its situation. It consists of very narrow strips or ledges of flat watered ground, between separate stages of a great river-cliff, so that on one side there is a precipitous fall of ground while on the other vertical cliffs overhanging the narrow fields, which, receiving their radiated heat, quickly ripen the crops; even at night the place does not lose its heat. Water is led over the fields from a ravine that comes from the high mountains. Apple-trees, apricot, mulberry, and the vine are cultivated, in company with the cereals, on the narrow space, and flourish well with the combination of moisture and warmth. In going from Garkon to the next village, called *Dāh*, we have passed from Baltistān into Ladākh. The Baltīs were in former times apt to make raids upon their more peaceable neighbours. Dāh, as the frontier village, protected itself by the agglomeration of its houses together to form a sort of fort; on two sides protection is given by a steep cliff, on two by a wall, with a good tower to guard the entrance to the enclosure. Now that all are under one government, and perfect peace has ensued, the dwellings are scattered; but still in winter time the people from the outlying houses and hamlets join to live within the enclosure, for warmth and for mirth's sake. Within its walls the ground is almost all roofed over, hardly any space is left for alleys, passages from one house to another are led beneath the rooms of a third; the whole is a strange crowding together of hovels. In this part side valleys of various degrees of importance reach down to the Indus; some are mere rocky ravines, others hold hamlets and villages. I visited the *Hanū*

Valley. At the mouth of it the Hanū stream comes out of a narrow, deep, impassable gorge; one turns this by rising over the shoulder of one of the mountains whose spurs compose its walls; passing up the valley, still between bare mountains, we come to a strip of cultivated ground; then we come to another narrow rocky part, and then again to where a strip of cultivation occupies the bottom of the valley; this space between the mountains becomes wider, and the level is occupied by the village of Yogma Hanū or Lower Hanū. On the way, fruit-trees and willows and a few poplars had been passed, but at the higher level now reached hardly any trees were growing. Goma Hanū, or Upper Hanū, lies a few miles above; beyond that the road leads to a Pass over the Indus and Shāyok watershed to the tract called Chorbat. It will be seen from the Political Map that this is the way of the route from Skārdū to Ladākh, the difficulty of the valley-road, in the parts we have lately come from, thus deflecting the traffic to go over a Pass of 16,700 feet. The Chorbat Pass is the boundary of Baltistān in this direction; by this road also used to come Baltī raiders, as the remains of a fort at Yogma Hanū prove, which the people of the valley had put up against them.

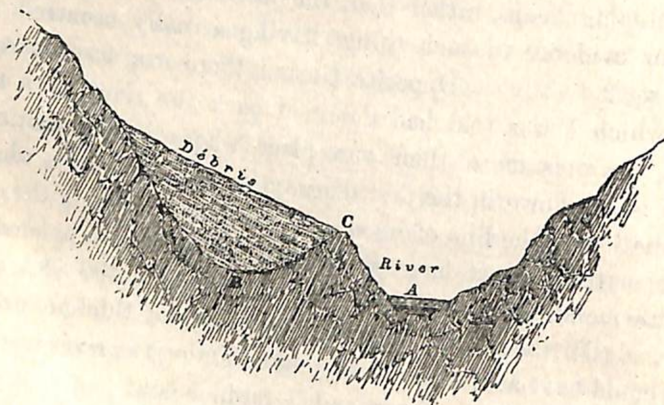
But we must return to the Indus Valley. One or two incidents of physical geography respecting this part of it may here be described. The lowest part, the bottom, of the valley has been spoken of as a narrow gorge. The gorge, not all along, but in places, is 600 feet deep; that is to say that the bottom part of the section of the Indus Valley is, for that height, specially narrow and steep; it seems as if, in the gradual cutting of the valley, this deepest part had been worked down under somewhat different conditions from the rest. I connect with this the narrowness of many of the side ravines where they join the main valley; the same causal difference (as, it may be, in the rate of downward denudation) affected the side valleys as well as the main valley. Thus the valley of the stream that comes down from Tsirmo, at the last, before reaching the Indus, closes to a narrow chasm with vertical walls of granite; this is quite impassable by man. We saw also

that other side ravines had the same character at their mouths—that is, where they are on the same level as this gorge of the main river that they unite with. Again, in Rondū, below Skārdū, I have observed the same combined phenomena, the bottom of the Indus Valley, for a depth of some 600 feet, being narrow and steep-walled, and the side ravines having a similar character as they near the valley of the large river. Some other things connected with the doings of the river caught my eye. It can be imagined that a narrow channel, bounded by rocks rising to high mountains, must be exposed to chances of damming by falling débris, that is to say by the taluses, or even perhaps by the fans, made by the waste of the substance of the mountains. It seems to me most likely that such damming of a voluminous river should occur when sudden large falls of rock—such as would deserve the name landslips—happen; the material would be less likely to be carried away bit by bit by the force of the stream. Such sudden falls as I speak of would make taluses, or steep-sloping heaps, rather than the less-inclined fans. Looking now for evidence of such things having actually occurred, what do we see? Opposite Garkon there was a small recent talus, which I was told had dammed back the river for a time. Again, there is more than one place where the disposition of débris is as shown in the first diagram on the next page, where a continuation of the line of its slope (and in its formation the slope of the material must have so continued) would end against the opposite mountain at a vertical height of about 400 feet above the river. In these cases I do not see how the thickness of the débris could have accumulated without damming the river back and forming a kind of lake above and a rapid below. The next diagram is somewhat more complicated. It shows what occurs two miles above Garkon. There is a rock (marked C on the cut) bounding the river; the summit of it is 400 or 500 feet above the water; we can see that it formerly was separated from both the mountain sides, being now connected with one side by nothing but a mass of débris which has filled up the space. It seems to me that the space at B, equally with that marked A,

must have been worn by the river. My theory is that B was excavated by the river before ever the hollow at A was made; next came the talus, filling up that then river-bed and damming



SECTION ACROSS THE INDUS VALLEY.



SECTION ACROSS THE INDUS VALLEY NEAR GARKON.

back the river; and lastly occurred the re-excavation of the channel, not exactly at the same place, but *out of a fresh part of the rock*, that is to say, at the spot A, rather than through the loose débris. There are many instances of alluvial and lacustrine deposits at intervals, which I shall not here describe, as the

subject of them wants to be treated in a technical way; a notice of these I hope to communicate to the Geological Society.

Of the inhabitants of the villages from Sanācha to Hanū I have purposely refrained from saying anything here. They have characteristics indeed of the greatest interest, but I keep back the description of these in order to bring it into connection with that of the other Dārds, for to the Dārd race the people here belong. The reader should look for the ethnological peculiarities of this tract in Chapter XVIII., under the heading "Buddhist Dārds." From the next village, Achīnathang, upwards, the people are thorough Ladākhīs in race and language.

At Achīnathang the Indus Valley begins to be rather less confined; the road along it is such that one can ride. Achīnathang itself is a neat and pretty village, on a plateau of river-alluvium 200 feet above the water. Near this place, in the pebbly alluvium formerly deposited by the river, at a height of 120 feet above it, are to be seen shallow pits, from which Baltī gold-washers had dug earth which they carried down to the water side to wash for gold. Every few miles, on each side of the river, are seen little tracts of cultivated ground. One was a continuous strip on a narrow plateau, a mile in length and but fifty yards wide. Sometimes, as at Skirbichan, is a wider expanse. Each tract has on it a collection of houses in proportion to the area, at the rate of a house to three or four acres. These white houses, half hidden by the foliage, and the spread of green fields, contrasting with the bare surrounding country, make each little village a charming sight. In this part the Ladākhīs are well grown; they are taller than those of the neighbourhood of Leh. This I connect with the somewhat milder climate and the consequently less severe life experienced.

Besides the villages which we see along the Indus Valley there are several in the side valleys which join from both right and left. At the mouth of these valleys one sees but a narrow opening; from this they often stretch up for miles, and contain cultivated land and several hamlets. Of these the higher ones endure a distinctly more severe climate than do the villages of the main

valley. Above the cultivation the ravines lead up into rocky wastes in the heart of the hills; those on the right bank lead to the watershed of the Leh Range; sometimes they lead to a more or less frequented Pass, as did the Hanū Valley, sometimes to a rocky ridge that man never reaches, for the reason that there is nothing to draw him, sometimes to ground so precipitous and impracticable that mortal foot cannot tread it.

Next above the part of the Indus we have been speaking of we come to a village mentioned two chapters back, Khalsī, the place where the road from Kashmir reaches the Indus Valley. But the route we followed in the march did not altogether keep to the valley, which now therefore remains to be spoken of. Along the valley is a succession of villages, but not a quick succession; two on a day's march are as many as one meets. Nurla and Sāspūl are the most important of those we pass; they both are near the river. Of the hills that here bound the valley, those on the right bank are not lofty; as was explained in Chapter IX., a range of secondary height intervenes before the great granite mountains are reached. On the left bank the prominent mountains are 2000 feet or so high above the valley; these are but the ends of spurs from a range that rises 6000 or 7000 feet higher, namely, to 18,000 or 19,000 feet above the sea.

Above Sāspūl the river in places flows where the road cannot follow it, in narrow inaccessible gorges. The Zānskār River, of great volume, here joins the Indus. As we approach Pitak we rise to the more open part of the valley.

I have described what kind of travelling it is to traverse the valley below Khalsī in summer time—toiling on foot along rough stony tracks or up rocky slopes under a powerful sun. This present part I have gone over both in summer and in winter; and, in spite of a severity of cold in the air far greater than I have ever experienced in England, I have been more comfortable on the winter journey. It was in January; the snow was falling lightly, keeping, as it fell, dry and powdery; the river was frozen in more than one place, so that we could cross, and choose which bank to go along, while near Nurla we were able to ride for a mile

or two on the ice over the Indus itself. Thus by ice and snow the way was made smoother; lambskin coats and caps and felt stockings kept out the cold, and the best houses of the villages afforded at every stage a shelter that in that season was welcome and comfortable.

Nearing Leh, we find that the ranges of mountains, on opposite sides of the valley, rise to about equal height, and for a considerable distance seem equal and parallel. But each has a character of its own. The one on the south-west rises, in a direct distance of nine miles, to a ridge which is commonly 19,000 feet high; just in front of the town of Leh is a peak of 20,000 feet, which retains perpetual snow; indeed there are on the range some fields of snow with small glaciers leading down from them; the lower limit of perpetual snow here is 18,500 feet. This ridge is indented by ravines in regular succession that open to the Indus Valley; the spurs between the ravines rise, at the last, where they near the main valley, to greater heights than they have in the parts near the ridge; so there is a second line of eminences, overlooking the Indus flat; these (which are composed of strata of shale and sandstone, dipping inwards), when viewed from certain spots, appear to form a continuous ridge; but in truth they are separated from each other by the ravines, and are each joined by a neck to the range behind; looked at from the flat these heights are seen to rise along a well-marked straight line. The alternating ravines have narrow openings from which project alluvial fans, which, meeting, form a sloping stony tract between the hills and the flatter alluvium of the main river. From the foot of these mountains, across the valley, to the nearest beginning of the opposite hills, is from two to three miles. These others are of a form different. The summit line indeed of this ridge also, as has been pointed out, is 19,000 or 20,000 feet in altitude; snow and small glaciers are found at the highest parts, but on the whole the ridge has a rocky surface. The difference of form lies in the character of the spurs. Sharp-ridged spurs descend from the central ridge to the Indus Valley; though possessing some irregularity of outline they decline without any great interruption, and project in long

narrow ridges of granite, which lessen both in height and in width from far back, leaving between them space for alluvial deposits—sloping stony tracts—of the sort which I have called "confined fans." In colour this range contrasts with the opposite one, being of far less sombre tints; drab and yellow and light brown are the colours shown by this granite, of which sometimes the jointed rock itself, and sometimes the loosened material disintegrated from it, is shown; on both ranges the bare surface, untouched by vegetation, is exposed. At places the river itself, at places the flat alluvium, ends the stony ground and touches the last points of the spurs; these are in some cases crowned with the white buildings of a monastery; at Tagnā (or Staknā) are two isolated rocks, on the summit of one of which is built a monastery; between the two, in a rather narrow passage, flows the Indus.

The alluvial flat is of clayey soil, irrigated by watercourses from the Indus itself. South of Leh it is occupied by the village of Chushot, which, being near half a mile wide and some miles long, is the largest cultivated tract in Ladākh; it has over 200 houses, not concentrated into a village, but scattered over the plain singly, or in twos and threes, at intervals of a hundred yards or so. Chushot has not the picturesqueness of the villages which we have looked at lower down the valley; here fruit-trees do not grow, on account of the severity of the wind that blows along the length of the flat; still we see some poplars and small willows, and it is probable that plantations arranged in belts—one protecting the other—would flourish. The people of Chushot are Baltis, Bhots, and Arghauns, the first predominating. As we go up the valley the cultivation of the alluvial flat ends, and the surface of it is of rounded pebbles. Farther on, a little above Tagnā, the river is bounded by high banks of alluvial matter, mostly belonging to fans that have been formed from the sides. Here, too, the fall begins to be greater, and the valley, narrowing, gets again the character it possessed lower down by Sāspūl and Khalsī. Besides the cultivation on the flat there are some villages in the tributary valleys on both sides, as Stok, Shān, Sabū, and Chimre; these are watered by the side-

streams. In one of these tributary valleys is situated Himis monastery, the most noted one in Ladākh, which has 200 Lāmās. The monastery is a large mass of buildings placed just beneath a cliff at a bend of the narrow ravine, and in that way well sheltered. The wide window spaces and open galleries, and the decorations of drapery and waving flags make it look quite gay. Close by is a grove of large spreading poplars, which must be of the oldest trees in the country.

The last point I have been to in this section of the Indus Valley is Upshī, a small village at the mouth of the Gyā ravine. At that place we will count Central Ladākh to end. Above it is a narrow portion of the valley, which is called *Rong*, where the river flows between rocks, along which it is difficult to find a practicable path; still, there also villages occur in the side valleys, and a small population finds cultivable just enough of land to get a subsistence from.

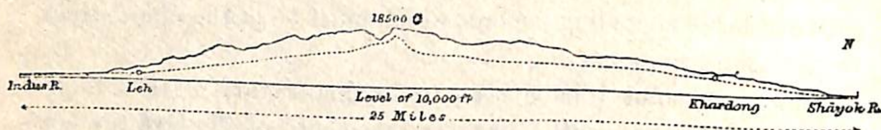
ROAD FROM LEH TO NUBRĀ.

In going from Central Ladākh to Nubrā (which lies along the banks of the Shāyok River and of a tributary to it) we must of necessity cross the Leh Range by one of two or three Passes. From Leh a direct road leads up along the stream whose waters irrigate the lands about that town. The Pass to make for is the Khardong Pass, which is 17,500 feet high; there is, therefore, an ascent to be made of 6000 feet. Not easily can this be done in one day; a half-way halt is almost always made, either at the last hamlet or farther up in the uninhabited part of the valley. The path is in places difficult for laden ponies; they are generally relieved of their loads and are replaced for the Pass by yāks. The way leads for some miles up the bottom of the valley, rising at an angle of 5°; then it continues in a branch valley of steeper gradient, till it reaches the watershed, which at this spot is a narrow rocky ridge.

A better idea of the form of the mountain range we are now going over than can be given in words will be got from the

annexed section of it, made through a spot a little to the west of the road. The broken line represents where the path itself goes.

On the north of the Pass the road crosses a bed of ice which lies on the slope, and leads down a steep descent of some 1600 feet, to a small lake enclosed by a stony barrier which looked



SECTION THROUGH THE LEH RANGE, ON A TRUE SCALE.

as if it might have been formed by avalanches. Thence an easy but long descent leads us for many miles down a valley between spurs from the main ridge. Several more little lakes are passed at different levels, which all seem to have been caused by either fans or avalanches damming the waters; there are, too, old moraine-mounds spread over a large space of ground. As we still descend we come to some grazing-grounds in the valley-bottom; then to some outlying hamlets, and then to a large village which is named Khardong. This place is on the remaining part of an alluvial plateau that has been much denuded. It is bounded in one direction by cliffs several hundred feet high, composed of alluvial matter. The onward path leads down to the stream at the foot of these cliffs, and continues along the bottom, where — rare sight for Ladākh — is a strip of brushwood jungle. From this narrow passage we debouch into the larger valley of the Shāyok River. Crossing that river by a ford (if the season be favourable) we then keep along its right bank for the length of a day's march, till we reach the centre of the district of Nubrā.

NUBRĀ.

This district consists of the valley of the Nubrā River—which flows from the north-north-west—and of a portion of the valley of the Shāyok River, with which it unites. There are the wide

alluvial flats of the two rivers and the lofty mountains bounding them, with ravines, seldom habitable, that lead down from the heart of those mountains.*

At the junction of the rivers the valley of the Shāyok is some four miles wide; that of the Nubrā River is from two to three. The flat is in part sandy and shingly, in part occupied by jungle-patches of a low growth of tamarisk and myricaria, or umbū. The line at the edge of the plain is sharply drawn; the mountains rise from it suddenly in rocky masses, and they rise to a great height. Sometimes one sees only the ends of spurs, but even these may tower above one with 7000 or 8000 feet of bare rock; sometimes the eye reaches to lofty yet massive peaks, may be rocky, may be snow-capped, of much greater height, with great spurs and buttresses coming forward from beneath them. The stupendous size and the suddenness of the mountains give a character of grandeur to the scenery of this district.

On looking at the two valleys which make the habitable part of it I find a cheerfulness in the general aspect of Nubrā beyond that of the rest of Ladākh. This perhaps may be put down to the fact of the valley being so open that the eye reaches from village to village, and is able at the same time to overlook several green expanses of low jungle and of pasture. But it must not be thought that the cultivation bears any large proportion to the whole area. The villages occur each at the mouth of a ravine on the undenuded fan that projects from it; still it is only a small part of the surface of the fan that is tilled; much of the ground is impracticable for the plough on account of the masses of rock that have been strewn over the surface by the stream-floods. The space occupied by the village is green and pretty. Groups of fruit-trees and many poplars and willows

* The following names are given to different parts of Nubrā: *Gyen* is that part of the Shāyok Valley which lies above the junction of the Shāyok and Nubrā rivers so far as habitation extends. *Skāmā* is the part of the Shāyok Valley from the junction downward to the boundary of Baltistān. *Tsurkā* is the valley of the Nubrā River below Panimik, on the right bank. *Farkā* is the valley of the Nubrā River below Panimik, on the left bank. *Yarmā* is the valley of the Nubrā River above Panimik.

flourish, and there are generally some one or two buildings of a better character than the ordinary peasant's cottage—as a monastery and a village headman's house—which brighten up the place. A character of the villages here—which those of the rest of Ladākh have not—is the enclosure of the fields with dry thorn hedges; these are necessary for a protection for them from the ponies of the travellers who pass through this country on their way to Yārkand. Another peculiarity is that a large number of the fields are laid in for grass; the letting of the pasture to the travelling merchants being a profitable business.

For equal altitudes the climate of Nubrā is nearly the same as that of Central Ladākh, except that probably the winter snowfall is, as regards the valley, somewhat less. Between each fall of snow so much of it disappears by evaporation and by the wind drifting it, that, throughout the winter, the cattle, sheep, and goats are able to graze in the low pasture grounds, only at night are they taken in under cover. Some of the villages have mountain pastures, to which the flocks are driven in summer time; but the climate is so dry that these afford but very scanty pasturage. The vegetable products are nearly the same as in Central Ladākh. The naked barley is the most general crop; wheat is grown in nearly all the villages; but not in large quantities, as the people themselves do not consume it. There is a little fruit—apples, walnuts, and apricots; of apricots the sweeter sort ripen only in the Shāyok Valley below the junction of the rivers; in this part also melon and water-melon ripen. Unmārū, a village which has a southern aspect, is the best place for fruit in Nubrā. The people of Nubrā, under the head of Ladākhī, have been described in the last chapter. There is this difference in them when compared with those of the near neighbourhood of Leh, that they are taller and thinner. The difference seems to be due to local circumstances. I could not trace it to any admixture of other blood. The characteristics of high cheek-bones and elongated eye are found in almost all. The customs of the Nubrā people, as far as I know, differ in no respect from those of the people of Central Ladākh.

I will now take the reader to a few places in Nubrā, in each of which something will be found that is worthy of note. At the village of *Chamshan* I got evidence of a flood, not a great one, the action of which illustrates the way in which some of the substance of the fans accumulates. The fans in Nubrā are uncommonly perfect in form, that is, complete, undenuded. Chamshan is on a fan in front of a ravine that leads up to some of the highest mountains, which feed glaciers that occupy the head of the ravine. I have not gone up this side valley. I was told that it contained three lakes; whether these are confined by the glacier or by masses of débris I do not know. In May or June of the year 1866 one of these lakes forced its barrier, and a flood came down the ravine and over part of the fan. The flood lasted three or four days (while the lake was emptying). It came over some ten acres of cultivated land, which it spoilt by depositing on it a layer of coarse rather sharp sand. All villages on fans are subject to such floods as this *if no deep channel has been cut by the waters for themselves*; that is to say, there cannot be complete safety from such rushes of water and sediment, unless, since the accumulation of the fan, the stream has become a denuding one, and has worn down a channel for itself, from the mouth of the ravine, so deep that no possible flood can bring the waters over the bank. *Charāsa*, on the right bank of the Nubrā River, is about the most conspicuous village in the district. At one time it was also the most important, for here lived the hereditary rulers of Nubrā, who ruled under the Gyalpo or Raja of Ladākh.* The houses of Charāsa are built on an isolated steep-faced rock, which stands up away from the mountain side; it is some 200 yards long and 150 feet high. All the upper part of it is covered with white buildings; the loftiest of them is the monastery; they were formerly defended by a wall — of which parts still remain — running along the rock at varying levels, and flanked by towers. With the

* To reach Charāsa one fords the Nubrā River, which there flows in numerous channels. At the end of September 2½ feet was the greatest depth found in them. A little later we forded the Shāyok itself and found there the same maximum depth.

exception of the Lāmās, the people of the village live on the rock in winter only; for summer they have other dwellings scattered about by their fields, but for warmth in winter they crowd to their old fortress. Here the buildings are crowded so close together, the space occupied is so completely roofed over—pathways and all—that when filled with human beings and with cattle it must indeed be warm.

A great part of the rock on which Charāsa is built * is rounded, smoothed, and even polished. It is a *roche moutonnée*. On the smoothed surface there are in several places very distinct grooves or scratches which most clearly denote the movement over it of a glacier. The grooves are to be seen close down to the level of the alluvium and up for more than 100 feet above it. The very summit cannot be examined on account of the buildings; but I have no doubt that the ice of the glacier completely covered it and extended to an enormous thickness above, and at the same time occupied the whole width of the valley, a width, which both here and for some distance up, is about 2½ miles. There is a slight difference in the direction of the scratches on the two sides of the rock. On the east side they are exactly with the run of the valley, namely, about north-north-west, while on the west they run north and south; this shows that the stream of the ice of the glacier separated, and part of it deviated a little, on coming to the obstruction of the rock.

This is by no means the only instance of ice-marks in the valley. A projecting rock about two miles above Charāsa is very distinctly polished and striated. Two rocks projecting out of the fan by the village of Kūrī have the form that denotes ice-moulding; and behind that village we see the same phenomenon extending for 700 feet up the hill-side. On the left bank, at Panimik, are low isolated hills, about 200 feet high, surrounded by the alluvium; they are of a dark metamorphosed slate; everywhere, except at the broken and weathered parts, are they ice-moulded and striated. In one of these little hills is

* The rock is a hardened, altered, shale, graduating into a crystalline rock, which also I take to be metamorphic.

a hollow occupied by a lake some 150 yards across; this hollow is rock-bound on three sides, while the fourth is of débris, which doubtless is moraine-stuff. Other instances could be given to prove that ice had once filled the valley for a length of at the least the 70 miles from Charāsa up to the watershed, and for the whole breadth of 2½ miles at the lower end.

It now remains to inquire to what depth was it thus filled; what was the thickness of the ice of the glacier?

We have seen that there are marks of ice-moulding up to 700 feet above the valley-bottom. It is possible that with further examination those marks could be traced still farther up the hill-sides. But we are not left to depend on this conjecture; there is other evidence of the ice having reached much higher up. Behind Charāsa is an even hill-side, unbroken by ravines; up this a zigzag path leads for a height of 4000 feet above the valley. At that altitude (14,000 feet above the sea) the top of the ridge is reached. It should be said that the ridge here—and as far up the valley as the village of Ayī, 14 miles distant—is of altered shale or slate and of a crystalline rock which I count to be the result of further metamorphism; these rocks are of a dark colour. The mountains on the opposite side of the valley are of granite, of a light yellow or drab colour looked at generally; only at their very base a metamorphic rock occurs. Thus the composition of the two lines of mountain is very different. Above Ayī I have not traced the division of the two formations, but it is possible that there granite occurs on the right bank as well; the argument that is now to be developed will stand whether it does so or not. At the very summit of that ridge behind Charāsa I found blocks of the light-coloured granite and gneiss covering the surface; many of them had a diameter of eight or ten feet; they extend along the ridge for a mile and a half or two miles, at levels up to 14,500 feet. Where, farther to the north-west, the ridge rises above that height, it is free from boulders, and shows nothing but the dark metamorphic slate. The boulders must have come either from the opposite moun-

tains, or, more probably, from the mountains on this side, more than 14 miles up. This transportation can only be accounted for by supposing that the glacier filled the valley to a depth of 4000 or 4500 feet—to have reached indeed up to the summit of the ridge at this comparatively low part of it, and there to have shed moraine matter; the position of this, on the very top, preserved it from subsequent removal by atmospheric influences.

It will be understood that with this enormous thickness the glacier could not have ended off at Charāsa; it must have reached to the Shāyok Valley, and there probably joined with other ice masses, and it may have extended far away down.

From every point on the ascent of this ridge, but especially from the summit, I obtained commanding views of the plain beneath and of the mountains opposite; these views gave so much more complete an idea of the form of the ground than could be got from below that it is worth while to dwell a little on what is seen from that height. We look down on the river flowing in an extraordinary number of channels, meeting and separating again so as to divide the bed into hundreds of curve-bounded pointed islands in form like the lights in a flamboyant window; a spread of brushwood jungle—in great part of red-berried Hippophae (which the natives call Tsarmā)—shows where the wandering stream has for some years not reached to. Beyond this alluvial flat of the Nubrā River are the fans at the mouth of each ravine; the completeness of the fan-shape of their outline is beautifully shown in this almost bird's-eye view. Looking to the opposite mountains we see the peaks of the central ridge between the Nubrā and Upper Shāyok valleys, mountains which are not visible from below. There is a sharp serrated ridge of a height of about 20,000 feet. From out of this rise peaks which the trigonometrical surveyors have found to be from 24,600 to 25,180 feet high; they are grand masses of rock standing up bold and clear. Each mountain is an irregular mass 5000 feet higher than the lofty continuous ridge. Snow clothes their summits and lies in thick beds on some of their slopes, while other parts are rocky precipices too steep for it to



Stanford's Geogr. Estabt. London

HIGH PEAKS EAST OF NUBRĀ. THE MIDDLE RIDGE IS 20,000 FEET, THE PEAKS ARE 24,000 AND 25,000 FEET.

remain on. The sketch gives the outline of the peak-masses with some exactness. It does not reach to the foot of the mountains in the valley, as the eye does from some points of view; when it does so there is in sight, in a distance of 18 miles, a vertical height of 15,000 feet. Farther along to the south-east other peaks rise for a thousand or two feet above the general level of the ridge, which seems to continue at 20,000 feet, till it ends suddenly at the corner where the Shāyok makes the great bend.

So much for the central ridge. The secondary ridges branch off from it with a height corresponding to its general level. Their edge is serrated, but not deeply so. They continue for many miles without any sudden fall to perhaps an average distance of three miles short of the edge of the valley, where in height they may be 18,000 feet. At these points they make the peaks which are seen when one is in the valley. From them there is a great and sudden fall down to the valley, the slope of which is about 35°; this is remarkably regular for all the distance—of nearly 50 miles—that is within sight, with the exception that the ravines (some that reach to the central ridge and some that go but a few miles back) cut up the sloping face into triangular masses of which the base is from mouth to mouth of two ravines, while the apex is at the end of the intermediate branch ridge.

The general colour of the mountains below the snow (and it is only the peaks, rising higher than the ridges, that are snowy) is a light greyish brown, from the hue of the granite they are mostly composed of. A darker streak along the foot marks the position of the altered shale. The surface of the mountains is usually not so precipitous as to form great continuous cliffs, but is worn all over into numerous minor ramifying gulleys and ravines, whose sides are rugged slopes of rock.

ZĀNSKĀR.

Zānskār is a district of Ladākh which lies south-west of Leh, *towards* the Watershed Range; its extent nearly coincides with that of the basin of the large river, tributary to the Indus, which is called after the name of the country. Zānskār is closely united

to the rest of Ladākh both by physical characters and by the close relationship in race, speech, religion, and character that exists between the people of the two countries. Till forty years ago, Zānskār was equally connected with Central Ladākh by political ties, being governed by a Raja, who was dependent on the Gyalpo at Leh; but now it belongs (as can be seen from the Political Map) not to the Ladākh Governorship, but to the district of Udampūr, in the Outer Hills, having been attached to this for, so to say, accidental reasons.

From all sides the approach to Zānskār, placed, as it is, in a maze of mountains, is of considerable difficulty. To the south-west of it the wide Snowy Range makes a barrier, to cross which must be a laborious and may be a dangerous business. From the north-west and the south-east, indeed, roads lead in from Surū and from Rupshu respectively, to traverse which is less difficult, but these lead over long uninhabited tracts. That way which first one would look to for communication with Leh—by the valley of the Zānskār River—is quite impassable, except when the winter's frost makes a road over the waters of the river. Instead of this, in summer time, the traveller from Leh has to make a long detour by Lāmāyūrū; he has to traverse fifteen stages in which several Passes have to be surmounted, before Zānskār is reached.

By far the greater part of the area of Zānskār is occupied by the ridges and the ravines of mountains, either of the Snowy Watershed Range, or of the more complicated mass lying between that and Central Ladākh. The inhabited region is nearly all included in the valleys of two streams and of the river they make by their union. These two streams come, one from the north-west, the other from south-east; uniting, they together flow away to the north-east. At their junction is a wide open space, which is the central part of Zānskār; it includes in itself the most important places. This space is a triangle, with a base of seven miles, and a perpendicular of five; on the three sides it is bounded by bare mountains. But a very small proportion of this plain is cultivated; the most of it is an expanse of stony ground; the

rivers flow through it somewhat below the general level; where water from side valleys has been brought on to the alluvial terraces and fans, there only is land under cultivation. On the north and east are bare brown mountains 6000 and 7000 feet above the valleys; their surface is in part of irregular cliffs, in part of slopes of loose stones, either simply weathered off and remaining in the same place, or else fallen and formed into taluses. Some of these mountains are wonderfully clear examples of aerial denudation; their naked sides are scarred and cut in lines which mark either temporary watercourses, or the path of falling snow and rock, while below lie the heaps and the outspread fans, which are the next stages of the débris in its seaward course. Great and striking objects as are these mountains, the range on the south-west shows over them a great preponderance of height; it has a deeply-cut serrated ridge, a line of sharp peaks rising well above the limit of perpetual snow.

In the open triangular space are many remains of former extended glaciers. In front of the mouth of the ravine, coming from the south-west, where is marked on the large map Sanī R., is an irregular moundy expanse made of stones, some angular, some rounded. Just south-west of Padam is another old moraine, which seems at one time to have reached across the stream a little above that place. The mound, also, on which Padam itself is built is due to a similar cause. But one cannot be sure how much of these old moraines were deposited by glaciers from the side ravines, or whether there was one large glacier filling all the long valley from the south-east. The position of Padam, the chief place, now but a village—but perhaps in former days when a Raja ruled there deserving of a higher name—is very curious. As said above, it is built on a mound of moraine matter. The mound is about 80 feet high; it is of loose, heaped-up blocks of gneiss, blocks which look as if they had stayed just as they fell from the glacier—the interstices vacant, the whole mass seeming as if it might give way. On the very summit of this heap was the palace of the Rajas, of which some walls are still standing; houses are built on the masses of stone all over the

face of the mound. The place is dilapidated; ruin and decay are shown both in the substance of the hill—the waste of mountains—and in the human habitations that were built on it. Such instances of moraines could be multiplied. Not far from Padam is a conspicuous group of very large erratic blocks. Just south-west of Thonde, nine miles from Padam, where the valley is about a mile and a half wide, there stretches right across it—except for the channel that the river flows in—an irregular moundy tract of stones and sand. This is clearly a moraine; its width, measured in the direction of the run of the valley, is half a mile; it contains pieces of gneiss, which must have come from the mountains south-west of Padam.

The climate of Zānskār is severe. The spring, summer, and autumn together last little more than five months, after which snow falls, and at once winter closes in, confining the people and the cattle within doors for the space of half the year. A much greater depth of snow falls here than in Central Ladākh. In the spring it causes avalanches from the mountains to such an extent that in the Nunak Valley the people cannot till a month has passed get about from village to village for fear of them. To clear the snow from the fields in time for the sowing requires special contrivance. During summer and autumn the people collect earth and store it in their houses in considerable quantities. In the spring, when they deem the time of snow-fall to be over, and the snow in the fields is partly melted and has begun to cake with the sun's rays, they spread the earth, which absorbs warmth from the sun, and melts the snow in contact with it. Sometimes snow falls afresh, and the labour is lost and has to be repeated. In 1869 there were three or four layers of earth and snow thus accumulated before the work was done. The villages of Zānskār are not so comfortable nor so picturesque in look as those we have seen in other parts of Ladākh. Trees are extremely rare; the continuance of snow and the force of the wind are much against their growth; there are a few plantations of poplars grown for the sake of timber, and lately the authorities have increased their number, but the trees produce nothing more than slender poles.

The people have, as has before been implied, the characters which were described under the head "Ladākhīs." They have, indeed, the better of these characteristics in a higher degree than the rest of the Ladākhīs. The Zānskārīs are the old-fashioned ones among them, retaining their simplicity of manners and their honesty without stain. The language has a slight dialectic difference from that of Leh; even in the various parts of Zānskār recognizable differences exist; but none of these seemed—as far as I could gather—to be of great importance. The number of inhabitants is very small. I have a list of forty-three villages, which may contain ten or twelve houses each; the total may be 500 houses and 2500 souls. The tax paid to the Maharaja's Government comes to a very small sum; it used to be 300*l*., but in 1869 it was reduced to 200*l*. There is a trade, small in amount, but still important to the Zānskārīs, which is carried on by three or four routes. First, the people of Rupshu bring salt, and take barley in exchange. Secondly, some of the salt brought by the last-mentioned route goes to Pādar and Pāngī (by very difficult Passes over the Snowy Range), and is there exchanged for rice, butter and honey, and for skins. Thirdly, other of the salt acquired from Rupshu goes to Surū, whence comes in exchange pattū (woollen cloth), barley, and a little cash. Thus it seems that the Zānskār people export of their own productions only barley, if indeed they do that, for it is imported as well as exported. Their profit seems to lie in the trade for salt; by acting both as carriers and merchants of this they increase its value enough to provide themselves with the luxuries that must come from outside. A fourth line of traffic is with Lāhol, whence traders come with cash alone, and buy ponies, donkeys, sheep, and goats. It is only by this branch of trade that cash enough is introduced into the country to pay the Government tax. Nearly all the rest is done by barter: for instance, 7 lbs. or 8 lbs. of salt exchange in Zānskār for 1 lb. of butter; in Pāngī 3 lbs. or 4 lbs. only of salt would be given. Again, in Zānskār the proportion in value of salt to that of barley is such that 2 lbs. of salt exchange for 3 lbs. of barley.

CHAPTER XIV.

LADĀKH: THE HIGHER VALLEYS.

RUPSHU — RUPSHU AS INHABITED — RARITY OF THE AIR — SALT LAKE VALLEY — TSOMORĪRĪ — TSO KYĀGHAR — INDUS VALLEY — PĀNGKONG LAKE — CHĀNGCHENMO.

WE now come to that lofty part of Ladākh where the lowest ground touched is as much as 13,500 feet above the sea, where there are long flat valleys at 15,000 feet, while the mountains that include these keep to the same height of 20,000 and 21,000 feet, which we have seen to be so general over a great part of the country.

RUPSHU.

The first that shall be described of these high tracts is that called Rupshu or Rukshu. It is a district at the south-east end of Ladākh, lying between the Watershed Range and the Indus. From the side of Leh it is approached by leaving the Indus at Upshī and following up the narrow ravine which there joins in from the south. In this, for many miles, the road continues gradually rising; it is a good road for this country, having now been made fit for the passage of camels in case the owners of any from Yārkand should bring them this way towards the Panjāb. The ravine is narrow; it is immediately bounded by no lofty mountains, but by bare slopes of earth and rock, composed of shale and sandstone. After 13 or 14 miles we come to Gyā, the last village in this direction, a place elevated 13,500 feet above the sea; it is a village of some forty houses, with a proportionately wide area of cultivation; both at Gyā and at an outlying hamlet, which is some 300 feet higher still, naked barley ripens and nothing else; peas are grown, but only for green food. It is one of the most, but not quite the most, elevated of all the villages in the country. At this place we leave houses behind, for at the next inhabited parts we shall come to, tents are the only dwellings.

But to reach those parts we have to cross the Toglung Pass, of 17,500 feet elevation, which we approach by continuing up the same valley for some 14 miles more; it gradually increases in slope, but even at the end is not steep; a smooth neck of ground makes the Pass, and the hills near are themselves rounded. From the summit we obtain a view which gives us some insight into Rupshu. There is a pretty steep slope beneath us of near 1500 feet, and then a flat valley extending long to the south-east and widening, thus showing us far off, 18 miles distant, the blue waters of one of the lakes which we shall visit—the Salt Lake. The flat bottom of the valley is bounded by smooth naked hills. It is such valleys as this, varying from a mile to (rarely) six miles in width, and enclosed by mountains rising sometimes 2000 feet and sometimes as much as 5000 feet above them, that make what are called the uplands, or sometimes the table-lands, of Rupṣhu.

Before detailing the many interesting phenomena in physical geography which are presented to us in the various portions of this district, we will look at those circumstances which affect the peopling of it; which cause it in a certain degree to be fit as a dwelling-place for man, yet limit narrowly the number of people it can support.

RUPSHU AS INHABITED.

With an elevation of 14,000 and 15,000 feet for the valleys, the climate is necessarily extremely severe in point of temperature; it is at the same time of an extreme dryness. The character of the summer climate of Rupshu is warmth of sun and constant coolness of the air. At midday the sun's rays are exceedingly powerful; on the decline one experiences cold, which is intensified by the biting wind that commonly springs up in the afternoon. At night, even in the height of summer, except when the sky may be overcast, water freezes; in the beginning of August I have seen ice caking the pools. The snow limit is about 20,000 feet; this great height of it is due to the dryness of the air, to the small amount of snowfall of each year, an amount so small that below that level it all becomes melted during summer. Mountains that

rise above 20,000 feet originate glaciers; there are small ones in the hollows of several such peaks; but there is no great snowy area. The surface of the hills is chiefly disintegrated rock, and the surface of the valleys is earth or gravel. Vegetation is extremely scant; here and there is some green by a spring or along the moistened bank of a stream, and on some hill-sides is a thin herbage. It is this herbage that is the support of the flocks and herds which sustain the small population of Rupshu. Cultivation is carried on in two places only, and to a very small extent; it is on their flocks that the people depend.

In the whole area of the district, which is about 4000 square miles in extent, there are but 500 souls.* These, as will have been understood, are Chāmpās; they are dwellers in tents, or, as the Persian phrase has it, "wearers of tents."† This small tribe, the Rupshu Chāmpās, have about 100 tents, one to a family; they are divided into two camps, which separate in summer, and frequent distinct pastures, but reunite in winter. They make about four moves during the year, with, I think, much regularity, though the time of these must vary if the season be unusually late or early; thus their stay at each encamping-ground is nearly three months on the average. The tents are of a black hair-cloth, made from either yāks' or goats' hair. They are of a peculiar form; they are constructed in two pieces, which are not closely united, but put together so as to leave an opening of six inches all along the top; this allows the exit of smoke, while the fall of rain or snow is so small as to cause little inconvenience, or the space may be temporarily covered with a piece of carpeting. The space within the tents is enlarged by the hair-cloth being pulled out here and there by extra ropes, which are led over a forked stick and then pegged down. The tent is ornamented with little flags and with yāks' tails fastened to the poles. I have no measurement, but from memory should say that the tents are about 14 feet long, 10 feet wide, and nearly 6 feet

* These people practise polyandry as the Ladākhīs do; to this we must directly attribute their small numbers. The necessity felt for polyandry arose from the number of sheep, goats, &c., being limited by the winter feed.

† *Khīma-posh.*

high; in one of these lives a whole family. The sheep and goats are very numerous. At evening time one sees the flocks and the herds coming down the hill-side and collecting at the encampment by hundreds, and even thousands. The sheep is of a large kind; it is here made use of for carrying loads; the salt from the lake is carried out of and grain is brought into the country on the backs of sheep; a small pack or double bag is made to hang over the back, filled to an average weight of 24 lbs.; the stronger animals will be loaded up to 32 lbs. The larger of the two kinds of goat kept here is made use of in just the same way. The more general is the shawl-wool goat, a small long-haired species; the kids of this sort are beautiful little animals. The wool that goes to make the soft fabrics of Kashmir is an under-growth at the root of the long hair of these smaller goats. It comes in winter time, not only to the goats but to the yāks, dogs, and other animals, domestic and wild both, as a protection against the severe cold. At the beginning of summer the wool grows out or loosens; it is then combed out from the goats and sent to Leh, where it is picked free from hairs and either worked up or sent on to Kashmir. It must not be supposed that the greater part of the shawl-wool used in Kashmir comes from Rupshu; the greater quantity and that of better quality comes either from the Chinese districts beyond the boundary of Ladākh, or from the Amīr of Kāshgar's country. The horned cattle are all of the yāk species. In Rupshu, as far as I know, there is neither the cow nor any of the hybrids of yāk and cow. The yāk is a half-wild, not easily tractable, beast; his numbers are not very large in Rupshu; there may be 400 or 500 head. The yāk's duty is that of a load carrier. The Rupshu people do not carry loads on their backs like the Ladākhīs, they depend entirely on their cattle, on their sheep and goats for merchandise that is easily divisible, on their yāks for that of larger bulk. In this way the Rupshu people are great carriers. Between Central Ladākh on the one hand and Gār in Chinese Tibet or Lāhol in the British country on the other, they are kept well employed in helping forward merchants' goods. For this service they get good

payment; sometimes it is in cash sometimes in grain; with one or two slight exceptions, all the farinaceous food they consume is imported, Kulū and Lāhol supplying the greater part of it.

The intermediate position of Rupshu is such that many travelling merchants come through the country. The tea-merchants of Lhāsa—a shrewd and eager set of men—yearly come this way with their venture of brick tea for Leh; their merchandise is carried free by the Rupshu people, according to an old arrangement between the authorities of Lhāsa and of Leh, but for their riding and light baggage they have with them a number of fine mules of rare pace. From Kunāwar in the Sutlej Valley come the Kunūs, a people of mixed Tibetan and Indian breed; from Lāhol and Kulū come others of pure and of mixed Tibetan blood; these have in many cases their own sheep to carry their merchandise. Of late years there has been a greater through traffic from the Panjāb to Leh, and even Yārkand, by the road that goes through Rupshu. Panjābī, Pathān, and Yārkandī merchants have all passed this way, which, indeed, as far as the road is concerned, is now the best by far between Eastern Turkistān and the Panjāb. The objection to the route is that the Pass over the Snowy Range may close before the circumstances of the trade allow the merchant to get away from Leh for the downward journey.

Although, then, Rupshu possesses so inhospitable a climate, though it is at one and the same time both parched and bleak, though its hills are barren and its valleys desolate, yet a busy life exists at times in certain portions of it. After travelling for some days without seeing a trace of man, one may come on an encampment of traders with some hundreds of sheep to carry their merchandise, their loads carefully piled up and protected by white tent-cloths; or one may meet on the road the merchants on their ponies, jingling with bells, accompanying their heavy-laden and somewhat unmanageable flock.

For people who are natives of temperate climes, the air of Rupshu in summer, though somewhat trying, is not too severe when the constitution is strong and the system in good order. The extreme cold of winter also could probably be endured if one

had the appliances one is used to where it is much less intense. But the Chāmpās weather it in their tents. The hardiness of these people. the way in which they enjoy rather than endure their climate, is an instance somewhat remarkable of the power of adaptation that the human race possesses. These men consider Leh as a place that should only be approached in winter, and Kashmir as a country hot and unhealthy, much in the same way as we, on better grounds, look on the Gold Coast.

Rarity of the Air.

There is one characteristic of Rupshū that is always making itself felt by those who use to dwell at lower altitudes. This is the rarity of the air.

In the valleys water boils at about the temperature of 187°, which corresponds to a barometer-height of 17·8 inches; hence the amount of air—and of oxygen—taken into the lungs with an ordinary inhalation is only $\frac{7}{12}$ths of what would enter them were one at the level of the sea. How this is compensated in the case of the Chāmpās I do not know for certain; I think, for one thing, that there is less waste of tissue in their bodies, as compared with those living in lower and warmer regions; they do not use such an amount of muscular exertion as the people of some of the neighbouring countries; walking it is true they are good at, but they are not always practising it, and loads they will not carry. The tending of flocks and herds is not an occupation that brings the muscles into powerful use. Still this will not account for all; there must be some compensating habit which enables them to take in a large volume of the thin air; probably they have an unconscious way of inhaling deeply.

With us the system tries in the simplest and most direct way to make up its wonted supply of oxygen; the breathing becomes both quicker and more powerful, that is to say there is an effort to increase both the number of inhalations and the volume of each. The intensity of this effect increases with every rise when once above the altitude where one's ordinary breathing—or an increase in it which is not enough to produce a consciousness

of change—suffices. At the greater heights, besides the feeling of oppression and shortness of breath, there comes on a headache and feeling of sickness such as one often has at the beginning of fever or sea-sickness, but this is not accompanied by either increased heat or cold of the body. With some, at the higher levels, vomiting comes on, but serious results do not seem to follow, and relief is felt almost at once on descending to a lower level.*

The height at which these effects are observed varies much, and it is not always easy to trace the cause of the irregularities. A great deal depends on habit of body; a man in good condition will hold out much higher than one who is unused to exercise. One first notices it when using some more than ordinary exertion, as when running or when walking up hill; in this way, for people who live below 6000 feet, the effects generally come on between 11,000 and 12,000 feet. At 14,000 and 15,000 feet one is liable, at times, to have an attack, as it were, of shortness of breath even when in repose. When I first visited Rupshu (15,000 feet), this came upon me when lying down at night and lasted for half an hour or so; but after a week I got over that liability, and never afterwards, when at rest, felt a want of breath, even when the camp was 2000 or 3000 feet higher still. Again, I have known a native of the Panjāb—one it is true little used to physical exertion—have a like attack at 11,000 feet. But though one may get so far used to the rarity of the air as not to feel it thus, yet any but the most ordinary exertion will surely remind one of it. At 15,000 feet the least slope upward in the path will make one as much out of breath as if one were, at a lower altitude, pressing up a steep mountain side. Talking when walking, even on a level, soon brings its own conclusion from want of breath. And when one comes to the greater heights—for here every thousand feet distinctly tells—ascending a slope becomes a painful labour. I have crossed a pass at 19,500 feet (one that lower down would have been an easy walk) where, on the ascent, at every fifty or

* This is only true if the organs are thoroughly sound; the rarity is very likely to find out any defect in either the lungs or the heart.

sixty steps, one was absolutely obliged to halt and pant to recover breath; then, however, I felt neither headache nor other bad effect; the usage of a month or two at high levels had done something to harden one to the circumstances.

The natives whose lot occasionally leads them into the highlands, very commonly attribute these results of rarefied air to some plant, which, for the purposes of their argument, they invest with the power of poisoning the air. Some of the herbs at high elevations give out a smell when rubbed, and these are brought in to account for the sickness. The much-abused onion, which grows wild in some parts at a good height up, often has these things laid to it. Of course an easy answer to this hypothesis is that the effect is greatest at those heights whence all these plants, and even all vegetation, are absent.

THE SALT LAKE VALLEY.

We will now begin to examine in detail various portions of Rupshu and some of the physical phenomena which it presents, commencing with the Salt Lake Valley. This is the widest opening in the whole of Rupshu; the length, in a direction north-north-west and south-south-east, is 13 miles, and along a considerable part of that length the valley is five miles wide; the level of it is 14,900 feet. It is a flat surrounded by hills, occupied partly by land and partly by water. The original outlet—an opening between the hills on the north-west—is now filled up to some 70 feet above the plain, so that there is no passage for the waters that collect in the valley, which, therefore, with its enclosing hills, forms a separate drainage-basin. The hills are for the most part low in comparison with the mountains we have met with, all are bare of visible vegetation; as a rule they are not rugged, but have smooth surfaces of loosened stones. The surface of the plain is varied; in parts there is sand and gravel; in other parts an expanse of white clay; this again is sometimes caked with a thin covering, still whiter, of salts, various in composition; lastly, a not inconsiderable portion is occupied by two lakes—about a square mile by the one of them

which has fresh water, and seven square miles by the Salt Lake.*

The history of all lake-basins and of the deposits in them is a subject of so much interest to geologists and geographers, that a statement of the facts that bear upon the origin of this one is sure to interest some readers. I shall therefore in this place not withhold the details of the results of such an examination of this valley as I was able to make.

What first catches the eye of any observer is the *margin-marks* at various levels above the present plain and lake, which show to what height the waters formerly filled this basin. These are sometimes lines of shingle upon, and sometimes indentations in, the hill-side. The indentations are either in the superficial débris or in the rock, where the waters had eaten their way in and formed not quite a cliff, but the beginning of one—a notch so to say. Looking from a distance one can sometimes count ten or twelve lines, of one sort or another, at different levels; they are most distinctly shown on the surface of some of the southern bounding hills; but all round, at intervals, they can be traced, the highest seeming to be the most continuous. Cunningham gives the height of these above the present lake-level as 150 feet; some of the marks, however, are at a considerably greater height than that. The second time I visited this plain I measured, as carefully as I could by levelling with a clinometer, their height at the spur of gneiss at the head of the small lake. Here the highest mark was very distinct; it is an indentation worn in the mountain-side, and it can be traced by the eye (which catches it at some distance even where a near look will hardly detect a mark at a particular spot) nearly all round, but it is here and there broken by taluses of more recent formation. This highest mark I found to be 320 feet above the fresh-water lake, which is three or four feet above the salt lake; this measurement cannot be more than a few feet from the truth. To this height, then, at all events, the basin once was filled with water.

* The fresh lake is called Panbuk, the salt lake Tso-kar.

The lake of that time must have had an area of something between 60 and 70 square miles, reckoning to the beginning of the narrow outlet. We shall presently come to this outlet or gorge to look at it closely, but here it may be said that the level of the bottom of it, of the highest part of the bottom, though above the present level of the lakes, and above that of the great expanse of flat, *is not so high as the margin-marks.* We do not therefore find the cause of the lake, as it was, in the gorge at that spot.

We now will look at the deposits left by the lake when it was of greater extent than at present—deposits which lie between the level of the highest margin and the present level of the water. At the south-east corner of the plain a narrow valley leads down to it from Folokonka Pass, a Pass which is more than 1200 feet above the plain. Between the mouth of that narrow valley and the fresh-water lake, there is a deposit of sand and pebbly gravel ridged in beautiful curves continuous for miles; these concentric ridges of fine shingle are mostly low and flat, not steep like the shingle-fulls of a sea beach on a tidal coast; this shingle is found thus for 100 feet and more above the plain; it was a littoral deposit of the lake, and it seems to have been ridged at these intervals on the receding of the waters. Some of the material of this deposit was very likely supplied by a stream from Folokonka Pass, so that in part it may be of the nature of a delta deposit; but it was both acted on by the deeper wave-movements of the waters of the lake and modified by the surface-movements at the time of their receding. The composition of the central part of the plain is various. In some parts it is sandy and even shingly; in others it is of a whitish laminated clay. To the east of the northern end of the fresh lake is an expanse of this clay. Between the fresh lake and the salt lake is a plain some four miles across of sand and shingle with flat thin stones of mica-schist scattered over it, some of them as much as a foot across; this plain has very slight undulations. On the north of the salt lake, again, is a plain or plateau of white clay about 20 feet above the level

of that lake; at the edge we see a section to that depth in a little cliff; it shows laminated whitish clay, with layers in it of a flattened tape-like water-plant; there are also strata of yellow clay and of fine sand; below is coarse sand with pebbles, mostly flat, varying in size up to that of a shilling; the coarser beds are false-bedded; in the cases I observed the false bedding was from north to south; in some of the clay there were shells of *Lymnea auricularia*, and Cunningham mentions a *cyclas*. Beyond, to the north of this dry clay plain, the flat again becomes sandy, with small stones strewn over it; this shingly plain slopes upwards towards the gorge; near the beginning of this gorge or outlet I see a section exposing 20 feet in thickness of sandy beds of various degrees of fineness, from an ordinary sand down to an extremely fine, slightly micaceous, sand. Thus we see that by the southern and northern edges of the old lake, and for some distance in, are sandy and shingly deposits; while at other places, including the centre of the area, is laminated clay, with some fine sand. These latter were deposited where, from depth, or from distance from the shore, or from the absence of currents, the waters were most still. The coarser sand and the shingle were more marginal or else were accumulated in shallower water.

For the sake of trying to understand the geological causes of the lake, we will, before looking more closely at the wider space, follow the outlet and examine the phenomena shown along that comparatively narrow valley. In this there are similar lacustrine beds of laminated clay, with the same *lymnea*; and here these deposits are at a level about 100 feet higher than the present Salt Lake; but above them the margin-marks still are visible, in continuation of those we measured. So that here we are where there was a narrow continuation of the great lake; the dam which caused it must be looked for farther on. But in going on we find a complication of the question to be solved. While the valley continues, about level, to the north-west, another valley, also level, opens on the south (which is that in which Rukchin and Kyangchu are situated), and since each of these has

an outlet to the general drainage of the country, we find that we shall have to discover the position of *two* dams in order to account for our ancient lake. After travelling along the valley that leads to the north-west, as far as three miles beyond the opening of the new one, we come to where two low-sloped fans from opposite sides have met; the height of the rise or neck made by their meeting would, as near as I could judge without levelling, account for the whole depth of the lake. Still we will look somewhat beyond them. The flat valley continues with a width of about a mile, turning southwards to Zarrā; here, at the joining in of a small valley from the north-west, is a great high bank of stony ground, which I consider to be an old moraine, though it is more regular and level-topped than most moraines; it juts out from that side ravine and comes across the valley, except that a narrow channel exists between the end of it and the mountain on the south-east. This embankment of loose stones must altogether have supported a glacier that came down the side ravine from the north-west, since, when traced back, it is found to take up the whole width of that ravine. This glacier and moraine very likely had to do with the damming of the lake, in conjunction with the two fans before described; that is to say one or other, at various times, was the cause of the damming in this direction according to their respective heights. For up to this very moraine extends the lacustrine clay in the hitherto level valley-flat. The lake therefore, once, or sometimes, extended an arm to the moraine and glacier dam, and sometimes was intercepted by the fans. Thus far we have dealt with one only of the outlet valleys. Let us now turn to that which led out to the south, to Rukchin and beyond. We see the margin-marks extending into it, not much above the valley-bottom; this is almost a complete level; some of the drainage-water it receives flows towards the Salt Lake, but becomes absorbed before reaching it, while some flows south-westward, and loses itself in a periodically-forming lake seven or eight miles from Rukchin, which lake is made by the meeting of two side fans. So here, too, is a damming, though perhaps not one that would account for all the depth of the old lake. The truth is that

without careful levelling one cannot ascertain the exact spot to which in this direction the lake may have extended, but we cannot here be far from its extremity, as will now be seen. Going on southwards we continue on a similar flat plain, and then come suddenly to the edge of a steep cliff, which ends it off and forms the side of a ravine. This cliff shows the composition of the ground below to be, for several hundred feet in depth, beds of rounded pebbles. From here for this valley, and from Zarrā in the case of the other, the two are in connection with the drainage of the Zānskār River. I have elsewhere* tried to prove that such accumulations as these last were made during some part of the glacial period, by the rivers themselves, on account of there being a greater supply of material disintegrated from the mountains than could be carried off by the water. Starting from this we can understand how that the two valleys, of Rukchin and Zarrā, were first gradually filled with alluvial gravel. I have little doubt that there was at one time a neck separating the areas drained by these two valleys; we cannot tell exactly where it was, nor can we tell near enough to say into which of the two valleys the area of the Salt Lake at first drained; it is now obliterated, covered in, by the alluvial and the lacustrine deposits. Then, at some stage of this filling in, the damming must have occurred either by the meeting of fans, or by the glacier and moraine, or by both. Until the time when the level of the plain had been raised as high as the neck, a dam in *one* of the two valleys might have produced a lake; as the filling up went on there came a time when the waters flowed over where the neck itself had been; then, for the lacustrine beds to have extended into both outlet valleys, and covered the neck, required the *two* dams, and this extension is evidenced by the margin-marks being found along both valleys.

Now returning to the Salt plain we will look more than we did before at the present state of it. Originally belonging, as we have seen, to the basin of the Zānskār River, it is now a completely separated drainage-basin. Its waters not only do not

* In the Quarterly Journal Geological Society, for August, 1873.

visibly flow out but do not even filter out through the sands and gravel. On the contrary, it is likely that some from outside oozes through to the plain, for a spring of water comes out of the lacustrine sands near the mouth. A few other springs are to be found in the area; these, with the surface-drainage of the yearly snow and of occasional rain, constitute the supply to the lakes. The fresh-water lake is partly, or chiefly, supplied from springs; its waters, though commonly called fresh, are slightly brackish, but only very slightly, not so much so but that they can be drunk by cattle and by men; I think this brackishness to be due not to evaporation but to the original impurity of the water. The greatest depth I could find in this lake was 10½ feet in the very middle. Its water flows into and makes the chief supply of the Salt Lake.

The shrinking of the lake from the height and area to which we have shown that it formerly reached was, or may have been, due to two causes. First, it is probable that on the waters reaching the maximum height and overflowing their dams they began to wear away those dams and so to lower their own level. To what extent this action went on we cannot be sure, only it cannot have brought down the level lower than to 60 or 70 feet above the present Salt Lake, because the ground at the gorge is as high as that now. The further lowering, and the consequent great diminution of water-area within the wide valley, can be due only to a change of climate, a change to one drier and probably warmer than before. Such a change would have acted in two ways—it diminished the supply of water to the lake and increased evaporation from it. The consequence is that the lake shrinks into the lowest hollows of the basin, reducing the evaporating surface, until, by this reduction, a balance between supply and loss is attained. This balance is at present held by the waters, which once extended (without counting in the outlet valleys) over 60 or 70 square miles, having diminished their area to about eight square miles, so that the humidity of the climate must have been reduced to *one-eighth* of what it was formerly; that is to say, one-eighth of what it was when the lake first became a lake without effluence; how much diminution of humidity occurred before

that it is impossible to say.* Another natural result has followed. The salts held in solution—which occur more or less in every source of water from the earth, and, as we saw by the supply of water not pure to the fresh-water lake, are here present in quantity—have become concentrated, and a Salt Lake is the result. The salts in this lake are indeed very much concentrated, and are ever being deposited from their solution. Some details about this must now be given.

The Salt Lake is shallow; at the eastern end I have heard that there is about 30 feet of water, in other parts I have not found more than six feet, while over a great space towards the western end there was but one foot of water; at that part the water was of a dirty yellow-brown colour; at the bottom of it was a quarter-inch cake of some alkaline salt, probably chiefly carbonate of soda; of this cake some was in a half-crystallized state, which was flexible like leather. There is an inlet in the northern shore of the lake, or rather there is a series of small lagoons separated from the main water by a bank of shingle and clay. Here the water, drying, deposits common salt, not indeed pure, but nearly enough so for it to be used for food. The salt is removed from this place by the Chāmpās, and fresh salt forms; the deposit is best and most plentiful when a good dry season succeeds the snow-melting. I saw four such pools separated from the lake and from each other. The water must ooze into them either from underneath or through the bar. As far as I know it is only in this part that common salt is deposited; the different salts in solution are thrown down in different parts, according to the degree of concentration; this last must depend on the shallowness and on currents; these again may be caused by the wind,

* I have here used the phrase "diminution, or reduction of humidity" rather vaguely. It does not follow that the reduction of precipitation between the above-defined epoch and the present time was as much as to one-eighth. One may suppose the precipitation to be *one-fourth* of what it was, and evaporation (area for area) to be twice what it was; this would account for the lake being one-eighth its former size. Or if the rate of evaporation has increased in the *same proportion* as precipitation has diminished, then $\frac{1}{\sqrt{8}}$, or nearly one-third, is the proportion. In general terms, however, it may be said that the climate is eight times as dry as before.

which is apt to be regular at certain times of the day. The salt thus obtained has an admixture of magnesian salts; it is bitter to the taste, and is not liked by those who have been used to the pure salt of the Salt Range of the Panjāb; it is indeed apt to produce an itchiness on the skin. Still it is consumed all over Ladākh, and is carried as far as Kashmir. Over part of the plain, especially when it is composed of white clay, there is an efflorescence of some saline compound. Most generally it is carbonate of soda, which is called by the Rupshu people *pātsa.* Again, one sometimes sees a layer, over an area of a few square yards, of a hard colourless translucent substance, which seems to be a mixture of sulphate of magnesia with a compound of soda; of this the native name is *gurm.* There are certain curious inequalities in parts of the plain which should be mentioned and if possible accounted for. That part which lies on the north of the Salt Lake, as before said, is of white clay; the level of it is from 10 to 20 feet above the lake; on this plain we see many hollows, commonly from 10 to 40 yards across, and 10 to 15 feet deep, with, usually, gently-sloping sides; at the bottom is generally a crust or deposit of some salt, as of the *gurm.* One of these hollows was as much as 180 yards across; in this there was a little water. A somewhat different phenomenon is seen on the east of the fresh lake; there is a plain of similar white clay, from which rise small mounds of the same material to the height of about four feet; they seem to be bulgings up of the clay, for the laminæ curve over from the centre of each. Of these two phenomena I have not a clear explanation to offer, but I think there must be connected with them a certain sloping of the layers of the lacustrine deposit which I observed at two or three places. Towards the gorge the beds of fine sand before described are slightly waved, and dip on the whole to the north-north-east, at an angle of 8°. At the place where the salt is scraped up a cliff section shows the beds to be waving and sloping. These things are not due to any deep-seated ground-movements such as produce the dip of strata in general, but must be caused by some local settling, brought about perhaps by a dissolving out of salt that had been deposited.

However these deceptive dips were caused, no doubt the explanation of them must apply to the surface inequalities as well.

TSOMORĪRĪ.

Rupshu includes not only tracts which are drained to the Indus, and lake-tracts whose drainage originally connected itself with the Indus, but also portions of the basin of the Sutlej River, whose arms thus reach to the back of some of the Himalayan ranges. Rupshu is indeed a space where the valleys of certain tributary streams of the Indus and Sutlej, near their sources, have become so filled with alluvial and lacustrine deposits that their levels approach in places to that of the watershed between the two rivers. This watershed is altogether irregular in its course; it follows now a ridge and now a low neck, varying much in altitude as well as in direction. I crossed it by a way that leads from the wide valley of Rukchin towards the south end of the lake called Tsomorīrī. That high-level Rukchin Valley is, as before was said, ended off by a ravine; this cuts down for 500 feet between the plateau of alluvial beds on the north and the limestone mountains on the south. Following up the ravine from that lower level, the base of it very gradually rose, and at the head of it was a low neck of rather soft shale, which lay between the limestone rock on the south-west and the shaly or the schistose rock of the mountains on the north-east. This neck, which may be 15,600 feet high, is a point on the Indus and Sutlej watershed. Beyond it a valley leads down to the south-east, through which flows the stream called the Phirsa; the mountains round are from 3000 to 5000 feet above the valley. More than 30 miles down, this valley (which had become narrowed) opens into a wider one, running north and south, which is that of which part is occupied by Tsomorīrī. At the debouchment there is a wide, rather sloping, plain,—the fan made by the Phirsa stream; this is bounded, at a distance of three or four miles from the mouth of the gorge, by the low ridge, of smooth rounded form and brown earthy surface, which there makes the eastern side of the larger valley. The mountains here are much varied; soon on the north of that

low ridge they rise, first with undulations and then in bolder slopes, to heights of perpetual snow. Between these eastern hills and nearly equally lofty ones on the west lies the blue lake.

Tsomorīrī (the name contains in itself the Tibetan word for lake, *tso*) is a fine mountain-bounded expanse of water; it extends 15 miles in length, and from three to nearly five miles in breadth, at a height of 14,900 feet above the sea. At a little distance from the shores the water is clear and blue; it is slightly brackish, enough so to be unwholesome for man to drink of, but not for horses and yāks. In winter time it freezes, and cattle can pass over it. The saltness is caused by its being a lake without effluence; several streams flow into it, but there is no outlet; the water supplied is evaporated from the wide surface of the lake. Here the balance of inflow and evaporation is maintained by the lake occupying the whole of the flat of the valley, to the very hill-sides—unlike the last lake-basin we examined, where the area of water had dwindled to a hollow in that flat.

The first thing one considers in coming to a lake is the *cause of the confinement of its waters.* In this instance the observer need not for long be at a loss to account for the formation of the basin. Col. H. Strachey has well described* how the Phirsa stream, debouching into the wide valley which is the southern continuation of the hollow occupied by the lake, has spread out a large fan-shaped delta across the breadth of that valley, and how the Phirsa waters wander over that deposit, sometimes finding their way to the lake and sometimes to the Pāra River. Col. Strachey does not himself draw the conclusion (though probably it was present in his mind) that the formation of this alluvial fan by the Phirsa stream was the cause of the lake being formed. I myself am convinced that it is the true and sufficient cause. The fan which, like others that have been described, is part of a low cone, has a slope in all directions from its apex of about 1½° and a radius of about two miles, so that there is a fall of 250 or 300 feet from the apex or centre to the circumference; the material of the fan is a gravel of shale and limestone†. If we go from

* Journal Royal Geographical Society, vol. xxiii.
† Mr. W. Theobald, jun., in 'Notes of a Trip to Simla,' printed in the Journal of

the debouchure along a radius nearly due east across the valley, we reach to where the fan abuts against a spur of the opposite low ridge. Now that portion of the water of the Phirsa which comes down north of this spot flows into the lake; any which should come down to the south of it would flow into the Pāra River and so join the Sutlej. At the time I was there no stream was flowing from the Phirsa Valley mouth to the Pāra, but there were water channels leading in that direction, which I could see would be filled on the rise of the waters in spring-time, and indeed there was water coming out of the gravel lower down—Phirsa water—which was finding its way to the Pāra. Col. Strachey states that the Phirsa sends its waters in the two directions, sometimes at once and sometimes alternately in different years; no doubt the action is very varying, a very slight change in the disposition of the gravel brought down by the stream, near the mouth, would make all the difference in the destination of the water.*

The sufficiency of the explanation I have given of the origin of this lake, as it is and was, must depend on whether it satisfies the conditions, first, of its depth, secondly, of the height to which formerly it may have risen. The fan will be enough to account for a lake of moderate depth, but if it be like the deep Alpine lakes other causes must be looked for. Col. Strachey had no means of ascertaining the depth of Tsomorīrī, but he infers (of this and other lakes) that "with reference to the general formation of the valleys in which they are embedded, it may be conjectured to range within 200 to 300 feet." I was at the pains to take an india-rubber boat to Tsomorīrī, for the purpose of sounding it, and my observations curiously coincide with the estimate which

the Asiatic Society of Bengal (vol. xxxi., 1862, p. 480), explains the formation of Tsomorīrī in this very way.

* General A. Cunningham ('Ladak,' p. 139) is strangely confused in his account of this part. One would be led to think from it that a ridge of 700 feet separates the lake from the bed of the Pāra River. In truth the only separation is the fan above described. But again, General Cunningham says that the ridge is apparently not more than 150 feet above the river at Narbū Sumdo. Now the valley-bottom at Narbū Sumdo is *below* the level of the lake; how, therefore, the said ridge could be 700 feet above the lake I am at a loss to see, as indeed I am to know what General Cunningham could have meant. In another description (Journal Asiatic Society of Bengal, vol. xvii.) he puts in a line of mountains running east and west on the south of Tsomorīrī; no such mountains exist.

Col. Strachey founded on inference alone. The results of the soundings I will give in some detail.

From Kyangdum (south-west corner of lake), course 25° north of east, towards first promontory on eastern shore:

	Depth in Feet.
At 100 yards from shore	36
At 200 " "	75
At 1¾ miles " (middle of the lake)	198
At 2½ " " (three-quarters of the way across)	242
In the bay between the two promontories on the eastern side	248

Around the little island (which is perhaps half a mile from the western shore):

Half-way between the island and the western shore	98
70 yards north of the island	22
¼ mile north of the island	178

From Karzok, course east:

At 20 yards from shore	12
At 40 " "	21
At 100 " "	93
At 200 " "	105
At ¼ mile "	122
At ½ " "	139
At 1¼ " "	166
At 1½ " " (this was the middle of the lake)	180

Thus the depth (at all events in the southern part) was most, not in the middle, but towards the eastern shore, and the greatest depth found was 248 feet. We have, then, no reason to think that the basin of this lake is other than an ordinary valley dammed by the alluvial fan of a side stream, for the thickness to which such fans are known to accumulate will account for all the depth observed.

Next we must consider the evidence, if there be any, of a former greater height of the water, and the relation of that to the fan considered as a dam. The greater part of the shore of the lake is edged with shingle; it is a shingle of, for the most part, flattish, not thoroughly rounded, stones. Such shingle also, at higher levels, I found in several places. Landing in the bay at the eastern side—a deep inlet, bounded by promontories of

rounded hills of a light-brown earthy surface—I observed that in this sheltered place had been formed and preserved shingle-ridges at levels which clearly told of the water having once been higher; there were several ridges, at different heights, the highest of them must have been formed when the lake was 36 feet above its present level. Again, if we go from Kyangdum (at the south-west corner) along the western side of the lake to Karzok, we shall pass over shingle which lies in sweeping curves at different levels up to 40 feet above the water. Just south of Karzok is a bay with shingle-banks curving round it; here I measured the height of the highest ridges, and found them to be in one case 34 feet and in another 44 feet above the water. The still-level of the water need not have been so much as this last by a little, because waves throw up shingle a few feet higher; there would not, however, be so much difference from that cause in a land-locked lake like this as where long waves roll in from the sea. We may take 40 feet above the present as the level to which the lake once reached. Now as to the height of the dam. I think that it would take a rise of somewhere between 50 and 100 feet to carry the waters over it, at the point where, as was described, the fan abuts against the eastern hills. The fan therefore accounts for all we know of the lake.

The question remains, what change of climate does the lowering of the lake from that 40 feet higher level evidence? In the recession, the area of the lake necessarily contracted; not, however, to a great extent; probably the contraction has not been more than one-fifth, the area of the present lake being about four-fifths of that which was occupied by the lake at its maximum. The supply of water being lessened, and the rate of evaporation being increased, an area of evaporation lessened by one-fifth is enough to balance the supply from streams and springs. This, then, is the measure of the increase of dryness from the time when the lake was first cut off from any outflow. But, as pointed out in the case of the Salt Lake, any amount of change in this direction may have occurred *before* the lake became an isolated drainage-basin. It may be remarked that

on a large evaporating area being formed the water may begin in some degree to get saline even before the outflow has ceased; wherever there is less outflow than inflow there must be concentration of salts, and there will be less outflow than inflow for any lake of large area even if it have an outlet.

A few facts must be given about the lacustrine deposits that have been formed and are now forming. At the south end of the lake there is a flat plain about 20 feet above the water level; this lies between the shore of the lake and the Phirsa fan, extending for about two miles; the surface is clayey, and sections show interstratifications of finely laminated brown clay and very fine sand; the laminæ are sometimes curved about on a small scale, making as it were pot-holes in the clay filled with sand. This is clearly a lacustrine deposit: it was made when the lake was about at its highest. There are traces of the same deposit along the eastern bank of the lake, for a mile and a half or so north of the north-east corner of it. To a great extent the material must have been supplied by the branching streams of the Phirsa River; but some of it may have been derived from the waste of the lake-side rocks by wave-action. This supply of material to form lacustrine beds *close to the outlet*, brought down by the stream that formed the fan that makes the dam, is a circumstance that I have never seen noticed in any account of a lake, but it is one that must often have occurred. Where the Karzok stream comes down is a very similar deposit. A flat 15 feet above the water extends out for half a mile from the hills; it is composed of beds of clay and sand, some of the latter very fine, and on the surface a fine shingle is strewn; this was the subaqueous delta of the Karzok stream, formed when the lake was higher than now; it ends off in a low cliff to the lake. At the north end of the lake, where another stream comes in, is a flat partly of shingle partly of sand; the sand from it has been blown up into small hillocks.

The *island* is about half a mile from the shore, near midway in the length of the western side; it may be 100 yards from corner to corner in one direction and 60 yards in another; it is of gneiss rock, rising only nine or ten feet above the water; the soundings

before given show that there is about 100 feet of water between the island and the near shore. This little place, being ordinarily undisturbed by man, is a great resort of the gull, which in Ladākhī is called *Chagharatse;* the surface was nearly all covered with its droppings, and there were hundreds of the young about; most of these must have been hatched near the beginning of July. Having heard that it was a matter of interest with some ornithologists to learn about the nidification of the wild goose,* I was on the look out for information concerning it, and I found that this island is one of the places where it lays its eggs. I was told by the Chāmpās that they find the eggs there just before the ice breaks up—say the beginning of May, after that they have no means of reaching the island; I myself found there a broken egg, but at the time I was on the island (the last week in July) the young had all been hatched. A few days later I followed the same inquiry in the valley of the Salt Lake, and on an earthy island in the fresh-water lake called Panbuk I found a nest where the mother was sitting with some goslings and two eggs, one just breaking with the chick; the other egg I measured and found to be 3¼ inches by 2¼, and very nearly elliptical in form. The nest was a slight hollow, lined with, first, a few bits of a soft herb, then with feathers; I was told that these goose eggs are found also at the edge of the Salt Lake itself.

For man and his followings the banks of Tsomorīrī are inhospitable. The bare rocky or earthy mountains and the stony plains afford little pasture for the flocks. Still the traveller finds patches of grazing ground just near enough for one to go from one to another in a day's march. Karzok, which is the head-quarters of Rupshu, is situated near the shore of the lake. Here is a house and a monastery. The house belongs to the chief man of the district and of the tribe. The monastery is for about thirty-five Lāmās; the building of this under the difficult circumstances of the place, whither every bit of wood had to be carried from far, and the keeping up of it, is creditable to the Rupshu people. There are, besides, eight or ten small houses—mere hovels—where some old and sick remain when the camp has gone to the Indus Valley.

* The barred-goose; in Ladākhī, *nangpā*.

The summer encampment is not close to Karzok, but it is made two or three miles up the side valley; at that distance up the ravine widens out, and on a stony expanse, through which a stream flowed watering a narrow green strip, were about fifty black tents of the Chāmpās, and a few white ones of merchants from Kulū, who had come to trade with them; this was the encampment of that half of the Rupshu tribe which keeps to the south-eastern pastures. The flocks were spread over the hills, seeking for the scarce herbage.

Karzok is one of the two or three places in Rupshu where there is cultivation; here some 12 acres are sown with naked barley. Close upon 15,000 feet, it is the highest cultivation that I know of. When I was there the crop was thriving, but in some years it fails of ripening. The land is irrigated from the stream of the side valley, that which made the delta before spoken of, which is one of the chief affluents to the lake.

The climate of this part is thoroughly Tibetan. Snow falls in winter, but not to a great depth. In summer the air is usually clear and cloudless. The year I was at Tsomorīrī, however, 1871, was an exceptional one all over Ladākh, and rain fell in showers such as had seldom been seen, accompanied by thunder. In these storms we saw the mountains in colours different from those native ones which the glaring sun had brought out so strongly. Before, the lofty hills, except where whitened by a capping of snow, had shown nothing but rocks and stony or earthy slopes of brown and grey, the distant ones seeming close from the rarity and clearness of the air. But now, with the clouds overhead and the storms filling the valley, the recesses of the purpled mountains seemed more distant; yet we saw deeper and deeper into them as the various shades showed out the successive spurs and ridges, and the water of the lake formed a bright belt in front of the richly-tinted hills.

Tso Kyāghar.

North of Karzok a high ridge of mountains edges Tsomorīrī on the west, having high cliffs in its upper part and sloping more

gently below. At the very head of that lake there is first a sandy flat and then a narrow grassy strip watered by a stream which ranks with the Karzok stream as one of the larger feeders of the lake. After a few miles this stream turns to the west, and another fifteen miles up would bring one to its source, which is at the old watershed of the Sutlej and Indus. A path up this valley leads to the Salt Lake plain; this direction I did not follow, but I took a way to the north-east, and in doing so came across a problem in physical geography which was quite unexpected.

At the bend of the stream, by its left bank, there is a terraced plateau of old alluvium. On this I rose to a height of a couple of hundred feet, and reaching the top found that this alluvium constituted a barrier to a side valley from the north-east, which now, on account of this barrier, is a completely isolated hollow, holding a lake about two miles long and one mile wide, and about 150 feet below the alluvial plateau. The lake is called by the Chāmpās *Tso Kyāghar*. The question is, how could that alluvium have been formed so as to have the hollow on its farther side? For this is not a fan of alluvial gravel sloping down at the angle of its formation to the lake it dams; sections of it show nearly horizontal beds of clay and sand, with rounded gravel, fine and coarse, interstratified. The lake is bounded on the south, east, north, and partly on the west, by low ridges of gneiss rock, from 150 to 300 feet high. In the middle of the north-west side the alluvium fits on to the gneiss ridge, and completes the circuit. On this lake also I launched my boat for soundings, and found the greatest depth to be 67 feet; this was about 300 yards from the southern end; in the very centre of the lake the depth was 48 feet. The water is brackish as in Tsomorīrī, being fit for animals to drink and not for men; the colour, even at the deepest, is green, not blue. A spring of water rises on the west side. There are signs of the lake having been some feet higher than it is now. Immediately on the north of the lake is a ridge of gneiss about 1000 feet high, which is part of the old Sutlej watershed.

I have not been able to solve satisfactorily to myself the ques-

tion of the origin of this lake, but I have turned over in my mind two or three hypotheses. The alluvium might at one time have filled the basin, which doubtless was originally but part of a valley tributary to that down which flows the stream; then, during some part of the glacial period, a glacier from the north-east may have scooped the hollow out of the gneiss and of the alluvium; thus the hollow would be a rock basin, counting the alluvium as part of the rock. Another theory is that at the time this tributary valley opened out to the larger one it was occupied by a glacier, and then the alluvium of the larger valley was deposited *against that glacier;* then, later, the ice disappearing left the hollow. The difficulty in the way of this is to know why no outlet was kept open by the water that must have flowed from the glacier. Altogether this little lake is about the most puzzling one I have met with.

INDUS VALLEY.

East of Tsomorīrī there is a part of Rupshu which I have never visited—the valley of Hanle. It seems from the accounts to be another of these flat, high-level, alluvium-filled valleys, bounded by mountains which soon rise up to a height of 4000 or 5000 feet or more above it. At Hanle, which is 14,276 feet high, is a monastery built on a rocky spur some hundred feet above the plain. Passing by this tract, of which I have no personal knowledge, let us go to the Indus Valley, which, in the highest part of it included in the Maharaja's dominions, forms a portion of Rupshu, and is periodically visited by the Rupshu tribe with their flocks.

From the south-east corner of the Salt Lake plain there leads a valley, which, followed up, brings one to an easy Pass, by name Folokonka, about 16,500 feet high, and beyond that one comes into the valley of Pūga, a place where borax and sulphur are dug. The road from Tsomorīrī, by the little lake Tso Kyāghar, also leads over a saddle of rock down into the Pūga Valley, which, farther followed down, brings us in a few miles to the Indus River. The former of these two paths is the way taken by the Rupshu Chāmpās in the course of their migrations. The portion

of the Indus Valley thus reached is just above the narrow defile or gorge called *Rong*, which, as mentioned in the last chapter, confines the river above Upshī. Where we have now come to (where Maiya is marked on the map) the valley is again open; the Indus flows in a wide smooth stream, between banks of alluvial gravel, with a depth that makes it just fordable; the hills rise, in some parts smooth and with a gentle slope, in others bold and steep, on both sides reaching, within a few miles, to a height of 5000 feet above the river. From Maiya I marched for four days up the valley, to the place marked Dora; what was seen in the 50 miles then passed over may be described in the same order as it was met with.

Maiya is one of those places often met with in wild countries about which one wonders that they should ever have had a name. There is no house or shelter of any sort, only a little sandy flat by the edge of the river, with no wood and no grass. Still it is a common halting-place, and for that reason it bears a name. The yāks (which through all Rupshu have been our carriers) were bidden by voice alone to swim the river, by doing which they reached a bit of pasture on the right bank. From Maiya the way lies along the left bank over ground stony and sandy, but with a little grass here and there. The Indus was flowing by in a gentle stream, with a speed that seemed between 1½ and 2½ miles an hour; the alluvial flat it flowed through widened to a breadth of perhaps three-quarters of a mile, this being confined either by the spurs of the hills or by higher alluvial deposits, as of the fans of side streams. As is usual one could not see well the hills on the side one was passing along; the hills on the north were a series of irregular spurs connected with the great range which is a continuation of that behind Leh; they were made of stratified rock—shale and sandstone *—sometimes showing the outcrop of beds, sometimes only a surface of earth and loose stones, of various tints of brown, grey, and purple, all, to the eye, perfectly bare of vegetation.

Now after passing over several miles of these stony tracts we

* Farther back, towards its centre, this range is of granite.

come to where there are two or three small villages, which are the highest in the Indus Valley. This bit of the valley is properly out of Rupshu, still it is traversed by the Chāmpās in going from one part of their district to another. The villages are three. On the left bank is Nidar, in a ravine that comes down from the south; it has three houses only. On the right bank are Nimū, of twelve houses, and Mad, of ten. Nimū is about 14,000 feet above the sea; it shows a tract of bright green at the edge of a great stony expanse; naked barley and peas are sown here, but only the former ripens. Of trees there are a few large willows of great age. I have two or three times noticed that in the villages near the upper limit of trees, where few grow, there are some of more than usual size; this probably is from more respect being paid to, more care taken of them; there is also a newly-made plantation of willows. At Nimū little snow falls, and what comes does not stay long on the plain; in winter the cattle and the flocks graze on the plain by the river, but are brought under cover at night. The people of Nimū are not Chāmpās, but are nearer the Ladākhīs both in look and language; they are, however, to some extent nomadic, since some of them take their flocks to other pastures in winter and live in tents while tending them. The village of Mad is in the next ravine to the east.

Leaving these last villages we follow up the valley of the Indus. It has widened to a plain, some four miles across, sandy at the outer portions, but covered with pasture about where the river flows through it. There are some small isolated rocky hills projecting up in the plain. This extends to where the river makes a sudden bend to the north-east.

Here we must pause to look more widely at the physical geography of the neighbourhood.

Cunningham, in his book on Ladākh, speaks of the "Kailas Range" as extending in one unbroken chain from the source of the Indus to the junction of the Shāyok, the name being taken from a peak on it near Mānsarāwar Lake (which is far to the south-east of the country we are dealing with), and he calls the great ridge behind Leh, between the Indus and the Shāyok, by

the same name, "Kailas or Gangri Range." It will be seen that I have not used this name in my map nor elsewhere; in this I follow Col. H. Strachey, who does not connect by its name this last ridge (which I have called "Leh Range," though on the maps I have put no name to it) with any of the chains to the east or south-east of the part we have now reached. As I have before remarked, the question whether two certain lines of mountain should or should not be counted to belong to the same chain or range must depend on the definition you give to the words "chain" and "range." It is conceivable that the definition might be different in the mouths of the biologist, the meteorologist, the geologist, and the pure geographer. In any case it would only be a difference of terms. I myself have been and am using the words in the most restricted sense, as merely descriptive of the most patent facts. Let us look at some of these facts in connection with the Leh Range. We are now where the unbroken continuation of the Leh Range ceases. That long line of granite* mountain, which began at the Indus and Shāyok junction, and has, up to here, extended from north-west to south-east for 220 miles, in that direction ends, and the Indus Valley occurs. Immediately beyond the river, between the Indus and the Hanle stream, occur again granite mountains, which, geologically, are a continuation of the others, and indeed lie in the same line with them. So that it would not be alien to the methods of geological description to say, that the Indus here cuts through the granite range; the range being taken to extend from the Indus and Shāyok junction to the neighbourhood of Hanle at all events —how much farther to the south-east I know not. Now to the

* The Indus, which flows at the foot of the range, is often in the line of junction of the granite with the soft shales and sandstones of what have been called the "Indus Valley beds"—beds of tertiary age—these making the hills on the left bank. The position of the river seems to have been determined by that of the junction of the hard and the soft rock. In the part of the range we have lately come to the shale and sandstone beds go up, so to say, farther into the ridge; but again the junction comes down and crosses the river at the bend above Nimū. The Hanle River comes from the south-east, at first in a hollow among comparatively low hills, probably along the junction of the stratified rocks with the granite; but for the last few miles of its course the Hanle stream diverges northwards into the higher country of the granite and comes through quite a gorge in that rock to join the Indus.

north-east of all this is a distinct line of mountain, of which Sajum Station, 20,021 feet, is one of the summits; this, according to Cunningham, would be part of the Kailas Range; here this range also is of granite, though farther east its composition changes; the line of it runs north-westward, overlapping the line of the Leh Range; the granite of the two ranges is in part continuous and in part separated, as regards the surface, by some shale and limestone; in the line of the occurrence of these last rocks is the depression separating the two ridges; the highest part of this depression is the Tsāka Pass, about 1200 feet above the Indus Valley, but nearly 5000 feet below the hill summits, on either side; the rise to this is a gentle ascent of 3°; the Pass divides the Upper Indus Valley from the Pāngkong drainage-basin. According to General Cunningham's nomenclature this Pass is a depression in the Kailas Range. According to the plan of description just followed by me the Tsāka Pass is a neck connecting two ridges, the Leh Range on the south-west and this other on the north-east. The difference seems to me unimportant in itself.*

To return now to the valley of the Indus. On coming to the second bend—the one with its salient angle to the north—we find ourselves in a level plain, of an average width of two miles, that stretches far to the south-east. Near where flows the river is a thin growth of grass, which makes this plain by far the most important pasture ground in Rupshu. Farther from the water the flat is sandy, dotted in places with clumps of Tibetan furze. The plain is so even as well as so straight that the horizon of the curvature of the earth can be distinctly seen in both directions, hiding the bases of the distant hills. The mountains which bound on both sides the valley rise, uncapped by snow, to 19,000 and 20,000 feet; that is to say, they are about 6000 feet above the flat. On the north-east the crest of the ridge is about

* A geological note may here be appended. On the rise from the Indus Valley to the Tsāka Pass beds of blue limestone and brown shale appear, dipping north-east, with granite mountains north-east and south-west of them. The Pass itself seemed to be of granite, though, on account of débris, this was not quite clear. A little beyond, the limestone again cropped out, in a patch, while some miles farther to the north-west shale again appears, in the valley, as if it cropped out from below the granite. This occurrence of stratified rocks beneath granite I have more than once observed in the Himalayas; it is a phenomenon very difficult to account for.

eight miles distant; a succession of spurs come down from it; between them are hollows from which come out, at their base, wide spreading fans. The hill-sides are completely bare of vegetation. On the slopes of the northern ridge, up to 2000 feet, blown sand has accumulated, sand blown up from the river plain; this sometimes lies in masses in the hollows, sometimes is spread on the hill-sides in varying thicknesses, in places it has been washed down again into the valleys on to the other débris. The different colour of this sand from that of the rock gives a strange look to the hills; it often reverses the usual light and shade, making the hollows bright and leaving the projections dark.

I went about 20 miles farther, south-eastwards up the valley, along the alluvial plain between the mountains. After that, as I could see, the space between the mountains narrowed; in the line of the valley there seemed to be an opening like a gateway; it is through this that goes the road into the Chinese territory; the river is deflected to the north-east, flowing in a narrow space, but after another 20 miles up the two valleys or hollows reunite.

Our farthest camp was at a place called Dora. This is where the Chāmpās of Rupshu spend the winter. Here are built some low walled spaces for sheltering cattle at night; there were many small hollows dug two feet deep in the ground with a course or two of sun-dried brick above, these are made for the tents to be pitched in them; at one end is a rude house built for the headman—low walls washed over with a glittering micaceous mud and roofed in with sticks covered with turf. When I was there, in August, there was not a soul in the settlement. At Dora falls hardly any snow. This is why the place is chosen for winter quarters, the sheep and the cattle being thus able to graze on the extensive though thin pasture found on the flat. Close by is a small shallow lake in the alluvium; it is about three-quarters of a mile long and a furlong wide, of clear fresh water. Two or three miles off are some little salt ponds in the alluvium; the water of these tastes both salt and bitter. About north-north-east from Dora the northern mountain-ridge changes in point of composition from granite to a more or less altered shale; the line of it

is continued more to the east than before, while in the line of its original direction are some more hills which are joined to the other ridge by a neck called on the Survey Map "Chang Pass"; this Pass is practically the boundary of Chinese Tibet in that direction; in the Indus Valley the boundary will be a day or two's march beyond Dora.

It is natural that the more favourable circumstances of this part of the Indus Valley should encourage animal life to a greater extent than is common in Rupshu. I saw here some small herds of the Tibetan antelope, and the Tibetan hare is common here as well as lower down towards Nimū and again towards Chushal; it is a large hare, with much white, the back of a brownish grey. But the animal one sees most of in these parts is the Kyang or wild ass—wild horse it has sometimes been called—an animal which is met with singly or in twos and threes in many parts of Rupshu (as, for instance, the Salt Lake plain) but here is in far greater number than anywhere else. In a day's march I saw some 300 kyang, as many as 100 at one view. There were several different herds; they all let us come to about 250 yards from them and then trotted off, or if frightened by noise galloped away, often leaving the low ground and taking to the stony slopes. This animal is decidedly nearer the ass than the horse, but in outward appearance is much more like a mule than either. He is like a good mule such as one gets in the upper part of the Punjāb, about Rāwal Pindī.* The colour is brown, but white under the belly; there is a dark stripe down the back, but no cross on the shoulder. Of a full-grown male, a fine handsome animal, that I shot in order to make closer observations, the following are some measurements:

Height	54 inches (13 hands 2 in.)
Length of head (from point of muzzle to root of ear)	$21\frac{1}{2}$ "
Length of ear	$9\frac{1}{2}$ "
Fore hoof, length	5 "
" width	4 "
Hind hoof, length	$4\frac{7}{8}$ "
" width	$3\frac{1}{2}$ "

* Trebeck, Moorcroft's companion, wrote that the kyang is neither horse nor ass, that his shape is as much like one as the other.

On getting as near as we could to one of the herds and dispersing it, we separated and at last with some difficulty caught a colt of fifteen days or a little more. He was 35 inches high, his head was 13 inches long, his ear 6 inches; his coat was thick but soft, the mane short and curly, the tail short and bushy. His voice, as well as the voice of full-grown ones that we got pretty near to, was almost exactly like that of a mule—a subdued grunt or abortive bray. This little fellow soon lost his shyness and would let anyone come near him without fear; we tried hard to rear him, but he died in two or three days. Several attempts have been made to tame the kyang, but little success has attended them. I have eaten the flesh of kyang in the form of steak, and found it very like beefsteak, but rather coarser; the Chāmpās are glad to eat it when they get a chance.

PĀNGKONG LAKE.

In entering another of the high-level valleys of Ladākh we leave the area draining directly into the Indus, and come to where the drainage either communicates or has communicated with the river Shāyok. We saw that the neck of the Tsāka Pass is a point on the watershed between the two basins. From its summit there is an easy descent into a very gradually sloping valley, which, in less than 30 miles, leads us past the village of Chushal to the shores of the Pāngkong Lake.

The series of lakes in one and the same line of valley, but just separated from each other, the lowest of which bears the name of Pāngkong or Pāngong, occupy a length of valley of 90 miles, or it may be more; the eastern end is unexplored, but the people about speak of its being an eight days' journey from end to end of the lakes. The upper part of Pāngkong itself and the lake next above are known to us only through the explorations (made in 1863) of Major H. H. Godwin-Austen, of the G. T. Survey, whose journal gives an admirable account of it,* and whose topographical work on the Survey Map is a most valuable guide to anyone who may

* Journal Asiatic Society of Bengal, vol. xxxvii., part ii.

follow his footsteps as I did to some extent. Col. H. Strachey also gives some valuable general information on the subject.*

The uppermost lakes of the chain Major Godwin-Austen himself was unable to reach, as they lay too far within the Chinese territory; below these there is a somewhat narrow winding lake over 40 miles in length; next (within the same valley) is a plain, three or four miles long, through which is a channel of still water; next to that is Pāngkong itself, the only one of the lakes that I myself have seen. Pāngkong is 40 miles in length and from two to nearly four miles in width; its height above the sea is 13,930 feet. The valley leading down from the Tsāka Pass and Chushal debouches into that occupied by the lake at about the centre of this 40 miles, at such a point that, in spite of the great bend in its direction, a great length, up and down, is visible. What strikes the eye in coming first in view of this lake is the lovely colour of its waters; especially towards evening is it of the richest deep blue, over the whole expanse; at morning time it is of a lighter but a very brilliant colour; close to the shore, indeed, the water is both so limpid that the bottom can be seen far down and colourless, but here too, if it is at all disturbed by the wind, at the rolling over of the waves before breaking, a beautiful sapphire tint is seen in it. In the eastern part, on both sides, high mountains bound the lake, whose bold spurs jut out in succession and, at last meeting, close in the view. These hills, like all those we have so long been amongst, are bare, showing nought but rock and loose stones; they are of shades of brown and yellow, only in the far distance is this earthy look modified by the tone which the atmosphere gives. It is but this absence of vegetation, this want of the varied hues which are one great charm of the best scenery, that prevents Pāngkong from being ranked for beauty with Lucerne or Killarney. Assuredly for grandeur of aspect, for combination of fine-formed mountains with the stretch of waters, and for the colour of the clear blue sky contrasting with the mountains, neither surpasses it; and indeed, under some aspects, it is difficult to persuade oneself that it is not as beautiful as can be. The

* Journal Royal Geographical Society, vol. xxiii.

western part of the lake has, on its north-east side, hills like those we have been looking on; we see long projecting spurs, sharp-edged, with sloping sides in places broken with rocky prominences; at some times of the day, the sun, glaring on them, is reflected from the stone-surfaces in such a way as to give a peculiar shiny, almost metallic, look; these spurs enclose regular slopes, of alluvial deposit—confined fans of gravel. Opposite, to the west, there is a great ridge a little retired from the shore, a great ridge rising to bold rocky and snowy peaks, with snow-beds on the higher slopes and small glaciers in the hollows, the lower part a mass of stony débris. Between the foot of this and the lake extends a strip of ground stony and sandy.

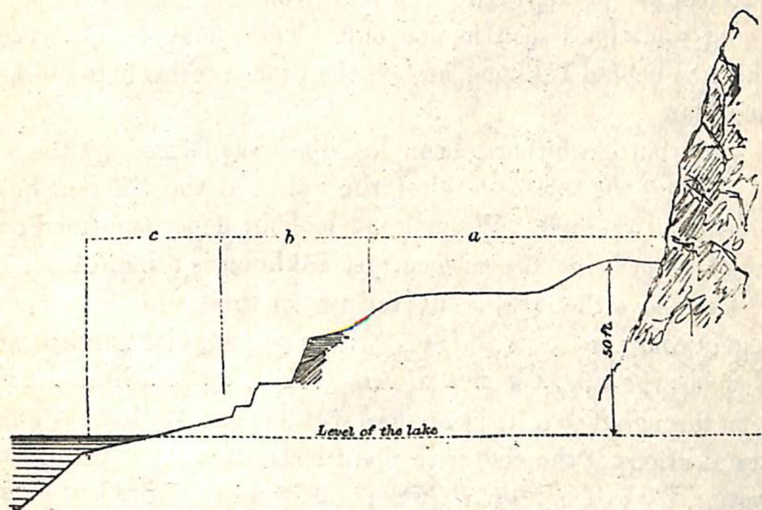
The water of the lake is salt, with a slightly bitter taste; I had counted it, reckoning by the taste, to be something less than half as salt as sea-water, and this estimate is nearly verified by an analysis of it by Dr. Frankland given in Dr. Henderson's book 'Lahore to Yārkand,' by which close on 1·3 per cent. of salts is shown to exist in it, nearly half of which is common salt, and the rest mostly sulphates of soda and magnesia, and chloride of potassium. This sample of water was taken from the western end; as one goes eastward it becomes more fresh; the water of the far end is, I believe, drinkable. This saltness denotes that the lake is without a present outlet for its waters; where the outlet might have been or has been we shall examine later; at present it will suffice us to know that all the supply of water evaporates, and we will now look to see what that supply is. The amount of rain falling on the area drained must be very small; the greater part of the water that reaches to the lake is due to streams flowing in, most or all of which rise in glaciers. The Chushal stream winds through the sandy flat of Takkung and falls into the lake, much diminished in volume from what it was above. Of the numerous small glaciers contained in the south-western mountains each sends down a rill, and many of these reach the lake, not perhaps continuously, but intermittingly, according to the melting of the snows, but whether changing diurnally or as sunny weather comes and goes I do not know. The Lukung stream, which

comes in at the far north-west corner, is an important one; it flows into the lake in a channel cut through a spread of sand. A few springs, too, rise near the edge and add a small amount, and some supply, I know not how much, must flow from the upper lakes through the channel at Ot.

Here and there at the edge of the lake, particularly in shallow places, there is a little vegetation; a flat seaweed-like plant, in form like narrow tape, grows apparently attached to the sand, that is with the end or root of it an inch or two deep in the sand; one sees small accumulations of this thrown up in company with shells of lymnea and planorbis. The lake, I am told, is frozen over for three months in winter, and can then be traversed. At places along the beach, a little above the level of the water, there are *ice-margin* marks, that is lines which denote the position of the frozen edge of the lake; these have been described fully by Major Godwin-Austen; I did not see such large examples of the effect of frost as he did, but I saw as it were turned furrows of the shore deposits lying parallel to the water's edge; these were from six inches to a foot high, and of two forms; first, elongated mounds of loose earth or stones, secondly where a layer of some cohesion had been bodily lifted or tilted up. I take these to be due to the expansion laterally of the ice on its formation over the surface of the lake. These marks I noticed at the following levels: 1½ feet above the present surface of the water, 3 feet above, and 7 feet above, with perhaps intermediate ones; these, of course, mark former higher levels of the lake. As to annual variation I have no very precise information, but I hear that the level varies some 3 feet from early summer, when it is highest, to autumn or winter. A former general greater height of the waters is shown by such evidences as proved to us the same condition for the Salt Lake. These we will now examine in some detail.

There is almost everywhere a beach at the margin, either sandy or pebbly. The bays are adorned by the regular curving of the beach-lines. The promontories have been cut into by the waves of the lake, which thus evince no inconsiderable power of denudation, for at one point a spur of hard rock has been cut back

so as to form a cliff of 200 feet or more in height, and several other points that I went to on the south side had a cliff-face to the lake of at least 100 feet. Thus far the effects might have been produced by the action of the waves at the present level of the water; let us now seek for beaches and other marks at higher levels. My examination was confined to the southern side of the lake, and was especially directed to places but a few miles from the great bend. In many places there were beaches at levels of from 40 to 50 feet above the present level of the water; they are very distinct in the bays south-east of Takkung. In a sheltered nook of the first bay were a succession of beaches which I carefully measured, and have represented in the annexed figure, drawn to scale. The shingle was composed of



SECTION OF HIGH-LEVEL BEACHES ABOVE THE SHORE OF PĀNGKONG LAKE.

well-rounded pebbles of limestone, calcareous sandstone, and shale, mostly from one to three inches in diameter; the two ridges in the space marked *a* were of loose shingle; beyond, beneath *b*, the shingle was consolidated by carbonate of lime into a moderately hard conglomerate, it had been cut into a cliff by later denudation; below this was a slope of sand to the water; a little way beyond the edge the lake became suddenly deep. The topmost

shingle-ridge here was 45 or 50 feet above the lake. The material of the beaches is not always well-rounded shingle; angular and half-angular stones often make up part of it. Besides the beaches there are other traces of a former high-water level, and these mark a level higher than that to which the beaches themselves rise. These are margin-marks similar to what we saw round the Salt Lake plain, impressions made in the hill-side by the action of the waves. Those at the highest levels are slight, and there is no accumulation of beach beneath them; indeed in some cases they cannot be traced on approaching near, but, when seen from a distance, their continuation at one level for a considerable length renders them distinct. The margin-marks occur at various levels above that of the highest beach up to about 120 feet (or perhaps only 100 feet) from the lake, several lines being sometimes seen in one cliff. These may be observed on the hills behind Takkung, and on the promontories between Mīrak and Man.

All that has hitherto been described was formed by the waves at or about the surface-level of the water, at the different heights to which it reached. We will now look for deposits formed on the lake-bottom below the surface. At Takkung is a plain from 12 to 18 feet above the lake, occupying two or three square miles; it is chiefly composed of white clay, with a sub-angular granite-gravel of stones the size of a pea strewn over it. The Chushal stream flows through it in a little ravine; sections cut by this show interstratifications of the clay with plant beds, each layer being from a quarter to half an inch thick; sometimes sand also is interstratified; the plant is the same tape-like weed that we saw growing in the water. These beds must have been formed in the still waters of the lake when they were higher than now; the material was no doubt in part, perhaps almost entirely, brought down by the Chushal stream. By Mīrak are beds of clay, sandy clay, and sand; this doubtless, as Major Godwin-Austen has described it, is a delta of the stream that there falls in, deposited when the lake was at a higher level than now; it extends into the lake and there is being added to; the shallow made by the deposit

ends off suddenly and at a short distance from the shore, the end of it being clearly marked by the change to blue water. Between Mīrak and Man is a repetition of the phenomenon, and at the north-west end of the lake, towards Lukung, is a sandy flat of like origin.

If now we begin to reason as to the origin of the lake, the investigation is hindered by our having no information as to its depth. I had not, when visiting Pāngkong, procured my boat, and there was no means of taking soundings. I shall proceed on the supposition that the lake is not materially deeper than Tsomorīrī, ready to alter any conclusion as to its origin which we may come to if measurements are taken which show this supposition to be wrong.* The hollow in which Pāngkong Lake is situated is continued, though much narrowed up, from the north-west end of it, past Tānktse, to the valley of the Shāyok. Major Godwin-Austen examined the old outlet in detail, and showed the true cause of the lake to be the damming of its waters by side alluvial deposits near to this spot. The sand and shingle at the north-west end, curving round, separate the waters of the lake at their present level from the outlet valley or gorge; they themselves, however, are evidence of the former extension of the lake water towards that opening. Again, tracing on in this direction the highest margin-marks (those 100 or 120 feet above the lake) we find them to end against a fan, composed of gneiss, that comes out of a steep valley on the south-west, and abuts against the opposite (north-eastern) hill-boundary of our gorge, the width of which gorge is here about a quarter of a mile. This then is what dammed the waters at the highest level to which we have traced them; it is the fan described by Major Godwin-Austen; the place is called Surtokh. At each side of this are other fans, which extend across the outlet valley at somewhat lower levels; it is quite possible that they too at different times dammed the waters, and so made the lake; which of them was the active agent must have depended

* Since writing the above I have seen it stated in the 'Friend of India' newspaper, of March 20, 1874, that Captain Trotter (attached to Mr. Forsyth's embassy) had sounded Pāngkong, and found its extreme depth to be 142 feet only. Therefore the argument in the text may, for that matter, stand.

on the different rates of formation of each fan. We have now the material from which to recount the history of the lake. The hollow in which it lies, a valley cut through the mountains, not different from many parts of the valleys of other tributaries to the Indus, and to be referred to the same origin as they, had its drainage flow out by Tānktse to the Shāyok. Then came the damming of the waters of that valley by one or other of the fans which have been pointed out. The water rose in the valley and made a lake gradually increasing in height, probably equally with the increase of the fan, which by no means was made all at once. Doubtless the water flowed over between the end of the fan and the mountain opposite. This overflow of the water very likely wore down the channel to some extent, and so the lake may have been partly drained again. Then, later, came a change of climate to a state drier than before, and a sinking and receding of the lake-waters to their present position, where they are enclosed by deposits which were laid down in the lake during its greater extension. It was at this stage that the water got salt. This drying up went on until the diminished area of evaporation was only just enough to balance the supply of water. It will be remembered that the margin-marks, at the higher levels, were but slight impressions on the mountains, while below 50 feet from the water were shingle beaches, which must have taken a great length of time in forming. I infer that the lake did not stay long at the 100-foot level, but was lowered from that down to 50 feet by the *wearing down of the dam*, while from 50 feet downwards the change of level was due to increased evaporation (or the increased ratio of evaporation to the supply of water) consequent on *change of climate*, this change being so gradual as to allow, at every level, of the fashioning by the waves of the stones which form the beaches.*

* I observed another set of marks, but only indistinctly from a distance, and my eye may have been deceived about them. Therefore I have not brought them into my argument, but will note them here in order to direct to them the attention of future observers. I saw them from the Man promontory; they are on the opposite side of the lake, at a distance of 3 to 3½ miles, about where *Keblung* is marked on the Survey Zincograph Map, and from there they extend towards Pāngkong Station

The explanation here given will, I believe, account for at all events the two great stretches of the lake, or the two lower lakes if they be called so; for there seems to be hardly any difference of level between the two, a deep channel of almost still water connects them; it will be the delta of the Ot Valley that makes the plain that lies between them. As to the higher lakes, it would be rash with our present knowledge to say much about them, but I will venture the supposition that each has been formed by an alluvial fan coming out from a ravine on one side or another of the main valley.

The great ridge of mountains on the south-west side of the lake is one that deserves closer attention than we have yet given to it. This may be called the Pāngkong Ridge. It extends unbroken from Chushal to near Tānktse, a distance of 40 miles; beyond are mountains closely connected with it in structure, which, in combination with this, may be said to form a range parallel to the Leh Range. From Chushal to Tānktse the ridge is very lofty; there are peaks in it over 21,000 feet, and these are not isolated ones high above the rest, but the general level of all approaches to that. The crest is a sharp, irregular, rocky line. On those parts of the highest slopes which are not too steep, snow lies on it which never melts, and small glaciers lie in the hollows below. As we look at the range from Mīrak we get a clearer view of its form, which is somewhat analogous to that of the mountains that we looked at on the left bank of the Nubrā River. There is one outer line of peaks, the gate-posts, so to say, of the hollows through which, at a high level, protrude the glaciers that mostly end off when still 3000 feet above the valley. From these near peaks there is a face of slope towards the lake, a descent of 5000 feet, interrupted in its lateral extension by the intervals of the glacier valleys. Back from these peaks run ridges,

(20,115). They seemed to me to be margin-marks continuously horizontal for some distance, at a level somewhere about 900 feet above the lake. If they should turn out to be so, then further causes must be sought out to account for the damming at that high level, which would have occurred at an earlier period; the reasoning as to the cause of the later damming of the waters would still hold. See second note to p. 328.

increasing in height to join the central ridge, on which are the highest peaks of all. The small glaciers occupy the comparatively flat bottoms of hollows which are surrounded by steep cliffs; they are, indeed, in the *arena* of cirques or amphitheatres; they come out of this space by a narrower mouth, and there they rest on the terminal moraine; beneath these are still larger accumulations of débris matter, the brown, weathered, colour of which often is enough to distinguish it from the greyer glacier stuff lately accumulated, though the two are sometimes so mixed up as to be undistinguishable. West of Man the central ridge comes more into view from below; the outer gate-post peaks do not exist; this I connect with the fact of softer, schistose, beds here forming the outer part of the mountain, flanking the granite and granitic gneiss which south of this had formed the whole mass of the range. The outlet valley, which at first runs parallel to this ridge, at a distance of 13 miles from the lake suddenly bends at right angles to the south-west and crosses the line of the ridge, making a great gorge through the gneiss rock. The gorge here is very narrow; on the left bank is a great height of rocky mountain, part of the slope of which is worn and broken into pinnacles; on the right is a huge cliff of gneiss curiously marked on a very large scale by waving streaks of lighter-coloured layers and veins. Four or five miles of this and the valley bends again to the north-west, and leads down to the village of Tānktse. This is where a ravine from the south joins the valley we have traced; this ravine drains another valley which lies, parallel to that of Pāngkong Lake, between the Pāngkong Ridge and the Leh Range; at the head of it is a neck joining the two ranges.

Let me now say a few words about the manner in which this country near Pāngkong is inhabited. Considered as a dwelling-place for man, Pāngkong is a grade or two better than Tsomorīri. Along its western shore are small villages, whose inhabitants cultivate the few crops—such as naked barley and peas—that will grow at this height of 14,000 feet. From Takkung, going north-westward, the inhabited places met with are *Karkfe*, with three houses; *Mīrak*, a fair village; *Man*, with six houses; *Spanmik*, with one

or two houses; and *Lukung*, two or three miles from the north-west corner, with perhaps five houses. On the northern shore of the two long lakes are no houses, but the tent-dwellers, chiefly those who belong to the Chinese territory, frequent certain spots in small numbers. *Tānktse* is a larger village than any of these. There is an open space at the junction of the valleys, part covered by masses of rock either fallen or transported; from out of the space rises a long, isolated, steep-faced rock, crowned with the ruined walls of a fort and monastery. Until the Dogrās came to Ladākh the villagers' houses also were built on the rock; but when the place was restored from the ruin that the wars had brought upon it, they were rebuilt on the plain. There is another village or two below in the same valley; then the Tānktse stream bends round to east of north to join the Shāyok, passing through a narrow gorge, which is not only uninhabited, but in summer time is quite impassable.

Chāngchenmo.

Chāngchenmo is the name of a long valley, tributary to the Shāyok, which extends nearly east and west for more than 70 miles as the crow flies. The height of its junction with that river must be about 12,000 feet; at the middle of its length it is 15,000 feet high, and from there it rises gradually to a Pass which makes the boundary of the Rudokh district.

It is only in winter that the valley is accessible from the Shāyok. In summer time the approach—from Central Ladākh say—is by Tānktse and Lukung, the little village at the north-west corner of Pāngkong Lake. This is the course of the road to Yārkand that of late years has been planned and to some extent followed. Between Lukung and Chāngchenmo a Pass (called Māsimik Pass) of over 18,000 feet has to be crossed. In going up the Lukung stream towards it one almost immediately comes to a tract three miles long and one mile wide (about 2½ square miles in area), covered with irregular mounds of detritus, except where two streams have worn out channels and made narrow flat spaces for themselves; it is a complete instance of an old terminal

moraine;* it is composed of blocks, some angular, some half-rounded, and stones, many of them rounded, chiefly of granite and gneiss, but also of white crystalline limestone, sandstone, and shale; there are many very large blocks, one (of gneiss) measured 27 feet by 20 by 9 as seen above the ground, probably there was more than as much again beneath, and there were several others of about the same dimensions. The height of the mounds is often 250 feet above the low parts of the flat where two streams are flowing, and very likely this is the thickness of the moraine-stuff at those places, but the average thickness over the area may be less. This moraine is evidently the deposit of a glacier that occupied not only that valley which still, as the map shows, holds a glacier of a considerable size, but also those branches which extend to the north-east; it very probably rose over the low spur behind Lukung; this is about 250 feet high, and nearly to the summit, quite up to 200 feet above the valley, *on the south side of it*, I observed transported blocks of granite, and the glacier may have entered, and even crossed, the valley of the Pāngkong Lake.†

The last hamlet in this valley, the last in Ladākh in this direction, is Phobrang, some five miles above Lukung; it is 14,500 feet above the sea, there are one or two houses, occupied in summer for the sake of the cultivation of some naked barley on the alluvial flat, and deserted in winter for Lukung itself. A little higher up is Chagrā, 15,000 feet, a place of encampment, at some seasons, of a few families of Chāmpās. From Chagrā the road takes to an easterly branch of the valley and rises gradually, with hills on either side rounded in form and stony in surface. Thus we get to the Pass which is a little below the level of the hills on each side, though at some distance they rise nearly 2000 feet higher; they

* A good view of this is obtained from the spur behind the village of Lukung, over which a path goes, an alternative to the valley road.

† If the doubtful margin-marks 900 feet above the present lake (as described at p. 324 in a note) turn out to be real, I should be inclined to attribute the damming to such a great depth to this glacier, of whose existence and importance we have such good evidence.

are of a dark-brown colour, in form for the most part rounded; their whole surface is covered with loose stones, either taluses or else rock disintegrated into angular blocks, remaining as yet unmoved. On the farther side comes a stony valley similar to the one we have just left; down this we continue for a day and a half's march, going sometimes across taluses, sometimes along alluvial terraces, over stony ground, gradually descending till we reach the Chāngchenmo River itself. Here is a valley stretching straight east and west for far, the bottom of it a stony tract with the river flowing through it in many channels. In front of us, on the north side, is a bold line of mountains 5000 or 6000 feet above us, rocky in face, rising to a rugged ridge.

Below this spot where we first reach it (called both Pāmzāl and Tsolū) I have not followed the Chāngchenmo Valley; I believe it in that part to be a rapid stream flowing between narrowing rocky mountains. Above, the valley is partly occupied by the wide gravelly river-bed and partly by alluvial terraces, all stony and bare; the hills that bound this vary much in height and steepness, some are smooth-sided and comparatively low, others both lofty and steep. A branch from the main valley leads to the north, up to the plateaus that will be described in the next chapter; it contains a stream of as great volume as the other. Gogrā is a place where a rest-house has been built a few miles up that valley, soon above which it divides into Kugrāng, the westerly branch, and Chonglung, the north-easterly.

The places where the three requisites for travellers in these regions occur together, namely, water, grass, and fuel, are found several miles apart. One is Pāmzāl, already mentioned; here is some pasture, and, close by, a great supply of fuel in the bushy growth of myricaria (umbū) and of tamarisk on the alluvium. Then there is a stretch of over 12 miles before any more vegetation is met with. Then at Kyam, where some hot springs come out, there is a spread of grass extending some way up the valley, and there is brushwood also, and farther up, to the very head, there is grass to be found in places. Again, at Gogrā, in the side valley,

there is fuel and a little pasture. Thus scattered and scant is the vegetation; excepting these far-between patches the whole surface is a waste of rock or stone. Still the vegetation, scarce though it be, is enough to help on the traveller, and even to support the following of one or two families of tent-dwellers who pass a portion of the year in Chāngchenmo.

CHAPTER XV.

LADĀKH: THE PLATEAUS.

THEIR SOUTHERN WATERSHED — LINGZHĪTHANG — THE LOKZHUNG MOUNTAINS—THE KUENLUN PLAINS — GENERAL OBSERVATIONS.

THOUGH Rupshu, taken as a whole, may be called a table-land, its valleys being 15,000 and its mountains 20,000 feet above the sea, yet the valleys themselves I have preferred to call "high-level valleys" rather than plateaus, thinking the former phrase more likely to convey to the mind a true notion of their form. Now, however, we come to certain tracts to which the words "plateau" and "table-land" may fairly be applied. They are not, indeed, of that complete table form which consists in a mass of high land descending at once on all sides; here, as in every case I have met with in the Himalayas, the lofty flat is surrounded by yet loftier mountains, the plateau is edged by ranges, or by a ring, of mountains. Still, in the cases we are coming to, as contrasted with Rupshu, the width of the flat is very great, the height of the bounding mountains bears to it a much smaller ratio.

Between the country which drains into the Shāyok and that whose streams flow into the Kārakāsh or into other rivers of Eastern Turkistān, is an elevated mass of ground—plains surrounded and crossed by rocky ridges—whence water finds no outlet, but dries up on the plains themselves. The level of these elevated plains or plateaus is 16,000 and 17,000 feet; the area of the isolated drainage-basin (as near as can be estimated from the explorations hitherto made) is no less than 7000 square miles, the space being 100 miles long from north to south, with an average width from east to west of 70 miles.

Our knowledge of this tract is but scant, and of a portion of it only conjectural. It is truly a part, "where mortal foot hath

ne'er or rarely been." The first European to cross it was one who did not return to describe it. In the year 1857 Adolphe Schlagintweit, in company with Muhammad Amīn, an Arghaun, of Yārkand, went from the Chāngchenmo Valley across these plateaus to Yārkand. Thence Schlagintweit went on to Kāshgar, where he was killed (in August 1857) by Wallī Muhammad, the then ruler, who himself later met his death from Y'aqūb Beg, the present Amīr. The first written account of the tract is that taken from the mouth of Muhammad Amīn, the guide, and given in the 'Punjāb Trade Report, 1862,' in the form of an itinerary. The next European who crossed it was Mr. W. H. Johnson, who at the time was on the staff of the G. T. Survey.* In the year 1865 this bold and enduring traveller took advantage of an invitation from the agent of the ruler of Khutan to visit that city, and on his way to it he followed the route, as far as the foot of the Kuenlun, which Schlagintweit and Muhammad Amīn had taken. Mr. Johnson, the first (and as yet the last) European who in later times has reached the city of Khutan,† has given us, besides details of the way, an account of the country he visited as it was during the short period of its history between the break-up of the Chinese power in Eastern Turkistān and the establishment of that of Y'aqūb Beg.‡ But we are here more concerned with the intermediate highlands, of which a map constructed by Mr. Johnson has been published by the G. T. Survey. This necessarily has not the same degree of detail as the maps published by them of tracts which have been regularly surveyed, for it was made on a hurried journey over ground where to halt was to starve; still, for the opportunities, it includes a large amount of information, and it has been the foundation of every map of that region constructed since.§ A few years afterwards, Mr. Hayward,

* Mr. Johnson, shortly after his return from this journey, left the Survey and took service with the Maharaja of Kashmir. He succeeded me as Governor of Ladākh, and holds that post at the present time (1874).

† The Schlagintweits, on a journey previous to that last of Adolphe S., had gone across the Kuenlun to Reshia, a place 100 miles south of the capital.

‡ Journal Royal Geographical Society, vol. xxxvii., 1867.

§ The map, as published in Calcutta by the G. T. Survey, is the eight miles to an inch Photozincograph. It includes much of other portions of Ladākh that is

Mr. Shaw, and Dr. Cayley went separately over the plateaus, the last to explore for a trade-route, the other two on their adventurous journey to Yārkand. In the next year, 1869, I myself went across the plateaus to the eastern branch of the Kārakāsh River, following partly in Mr. Johnson's and partly in Dr. Cayley's footsteps, and in this journey made the observations which I shall now put down. In 1870 Mr. Forsyth's party, on the first mission to Yārkand, went over the plains; they returned by a new route on the west.* Then, in 1873, one party attached to the second Yārkand mission took the old route, but as yet no detailed news of their doings have been made public.

In the regions through which the reader has hitherto followed me—in the high-level valleys, among the bare mountains, of Rupshu—no great difficulty in providing supplies and means of carriage presents itself to the traveller. The inhabitants of Rupshu, though few, are enough in number to attend to the wants of those who pass through their ground, and their cattle do all that is wanted for the carrying of baggage. Bare as that country is when looked at as a whole, yet, with very few exceptions, there are to be found, at distances which are practicable for a day's march, water, some amount of pasture for the baggage animals, and fuel, either furze or *burtse*, or sometimes (as at one or two of the halting-places in the Indus Valley) the dung of the kyang, or wild ass. But now, in going beyond the basin of the Indus, especially in traversing the high plains with their enclosed drainage-area, one is put to straits to provide carriage for the necessaries of one's camp, and to procure food for the beasts of burden themselves. For at some stages fuel is wanting, at others grass, at others water even. Hence

reduced from the regular Survey, and also some tentative representation of a tract which was afterwards explored by Mr. Hayward, who corrected certain portions. I refer particularly to the valley of the southern branch of the Kārakāsh River, which Hayward, proving it to be the main stream, traced to its source on the south-west of our tract. Mr. Johnson had, however, discerned the connection of this valley with the Kārakāsh drainage, as the following words quoted from his account in the Journal of the Geographical Society will show: "On the west of the plateaus there are no plains, but a series of deep valleys, which are the sources of one of the principal affluents of the Kārakāsh R."

* An account of this journey is given by Dr. Henderson in his 'Lahore to Yārkand.'

special arrangements are necessary to accomplish the journey; and even with these some loss of baggage animals may be expected.

Tānktse is the place whence a start should be made; it is the last large village, and contains a Government store-house, and is the head-quarters of a *kārdār*, or manager, under the Governor of Ladākh. The smaller one's camp, the lighter the baggage, the more likely is one to get comfortably through the journey. With half-a-dozen men of my own, and an equal number of people from the Tānktse and Pāngkong region, we took for our luggage and supplies eleven yāks and five ponies, and brought back, after a month's marching, six yāks and four ponies. This and other experience shows that ponies are far better for the work than yāks; for ponies can carry, besides a light load of baggage for their master, barley for themselves, which yāks, not being used to eating it, will not be able to live on; ponies also do the day's march quicker than the yāk, and therefore have so much the more time to graze on the scanty, thin, pasture that here and there is found. My own journey was the more trying for the animals in that, after passing through the most desert part to where the valleys begin to decline to Turkistān and to become less bare of vegetation, they had to return over the same desert, without recruiting themselves in the lower pastures.

From Tānktse, or Pāngkong, the road leads one over ground that was described in the last chapter to the Chāngchenmo Valley. This it leaves by the valley in which is situated Gogrā, which is the last place where water, grass, and fuel are all to be found in plenty. I shall not trouble the reader to follow me through each day's march as I made it, but shall rather try to give him an idea of the character of the country such as I myself derived from observing it in the outward and homeward journeys, with the help, I must add, of Mr. Johnson's map. A list of the marches will be found in Appendix IV., Route 27.

THE SOUTHERN WATERSHED.

The southern watershed of the plateaus lies to the north of the eastern portion of the Chāngchenmo Valley, and is continued

eastwards beyond the head of it. The ravines that lead up from that valley to the watershed are in their lower parts bounded by steep, more or less rocky, hills; as we get to the sources of them, they rise with a more gentle inclination, and their sides become more smooth. The ridge which here makes the watershed is a line of rounded hill, of a height of from 19,500 to 20,000 feet. The Passes over it are not cut deep; the one that we crossed, as I found by means of the Boiling Point thermometer, which gave 178·9° as the temperature of boiling water, was 19,500 feet, this being but a hundred or two feet below the general level of the ridge; one or two other Passes are somewhat lower. Even at that high level the Pass was free from snow; there were some snow-beds near, but these were not permanent ones. The difference in the character of the form of the ground on the two sides of the Pass was very striking. On the north side there were low hills of rounded form, down-like; to the south the summits were no higher than these, and the rocks were the same, but, the ground being cut into deeply by steep ravines, it had the ruggedness, and the degree of elevation above the immediate valleys, which give the more usual mountainous character. The rock here is not a hard one; it is shale, with interstratifications of sandstone, the strata of which are continually undulating. This rock was disintegrated so as to make a comparatively smooth dark-brown surface, either altogether of loose stones or of stones and mud intermingled, or sometimes with the two arranged, by the melting and sliding snow, in alternate lines on the slopes. All is completely bare of vegetation.

Over the watershed, for some miles to the north, extend these hills, rounded at top, and gently sloping to the valleys, not deep, which lead away northwards. These valleys, may be 500 feet, may be 1000 feet, below the summits, are sometimes dry; but those which reach far back have small streams flowing in them, which unite into one that flows away to the eastward, and, it is believed, empties its waters into a saline lake, where they evaporate.

From the watershed ridge northwards for 15 or 20 miles extend

these hills, varied by some ridges more rocky. Then, near the place marked Burchathang (or Burtse-thang), begins ground of another kind. On rising to the summit of the last low ridge, we suddenly acquire a wide view over an immense plain, which begins a few hundred feet below us, and extends without a break, in front, from south to north, for 16 or more miles, and from right to left for a distance that must be 50 or 60 miles. This plain has of late years been called by the Ladākhīs *Lingzhīthang*, and the name has been adopted by other travellers, and may well be continued. It is the southern division of the plateaus which lie between the ridge north of Chāngchenmo (the watershed we have just been looking at) and the Kuenlun Mountains. For the northern division, which we shall come to later, separated from this by ridges of hill (which I call the "Lokzhung Mountains"), I propose the name "*Kuenlun Plains.*" These reach to the very foot of the Kuenlun Range; they consist not of one wide open plain, but of a plain a good deal divided, though not absolutely separated, into tracts by long branch ridges. These three, Lingzhīthang, the Lokzhung Mountains, and the Kuenlun Plains, we will now successively examine.

LINGZHITHANG.

The lateral dimensions of this plain were given above. Its elevation, as near as I could calculate from two sets of Boiling Point observations which were taken from Pāngkong as a datum, is 17,300 feet on the southern side, and 17,100 feet on the northern. There is a very gradual slope from south to north, or from south-west to north-east, one imperceptible to the eye, but marked by the course of the streams.* Besides this general slope there are minor variations of level; these, however, do not (as far as I saw) exceed 20 feet; the plain, therefore, is wonderfully even. In character it is bare and earthy; in colour it is brown and white in alternate spaces, according as the whitish clay which is the

* The title of a photograph given in Henderson's 'Lahore to Yārkand' is written "Camp at Linze Thang 18,500 feet above the sea." This is clearly a slip, for in the text 17,300 is the height given.

foundation soil of the whole is exposed on the surface or is strewn over or covered with stones. It is indeed "a weary waste, expanding to the skies."

If, from upon this plain, we survey the mountains around, we see that on the south, the side we have come from, it is bounded by low-sloping hills. On the west come bolder hills and even snowy peaks; in these there is a gap, to follow which would lead one down to the river Shāyok. All along the north of the plain is the range of the Lokzhung Mountains, whose direction is west-north-west and east-south-east; this begins on the west with two peaks between 20,000 and 21,000 feet, and continues at from 18,000 to 19,000 feet, a range of irregular hills, steep, rocky, and peaked. To the east-south-east the plain at first seems boundless, but again, from some points, summits of mountains become visible, which probably belong to an enclosing ridge.

The climate of this high plain is one of almost daily extremes. The sun may rise in a clear sky, and, as it climbs, warm the ground with a speed proportioned to the thinness of the air that the rays have to pass through, increasing its warmth till two or three hours past noon; the air being still, the lowermost layer of it becomes somewhat raised in temperature, but the traveller feels chiefly the double effect of the direct rays and the radiation from below, and he labours over the desert plain oppressed by the heat. When the sun has declined but half-way to the horizon, there springs up a wind from the south-west or west-south-west, a keen and searching wind, that quickly makes one suffer from cold more than before one did from the heat. So it continues till nightfall, then gradually the wind dies away; in the still night the ground loses its heat, and a severe frost occurs by morning. On the 26th August 12°, and on the 11th September 10° Fahr. were the temperatures recorded by my minimum thermometer. This, I think, is the usual course in summer time, but, exceptionally, cloud, or a storm of wind, comes on that tends to lower the day and perhaps to raise the night temperature. One cannot tell to what depth snow falls on this plain in winter; I have never heard of anyone having traversed it at that season,

but I saw it white with snow on the 12th September; the whole plain was covered with snow, while of the bounding mountains the lower slopes were of the brown colour of their own rocks, their summits only being whitened by the fresh fall; but at that time of year such a fall would be sure to melt. The winter's snow certainly stays on the hills till summer is well on. The streams which the melting snow supplies are apt to dry up by the middle of August; in crossing the plain at that time, and again in September, I found but a few pools of water in one of the chief stream-courses; of these one was brackish and one fresh. One day I was on the look out, as the goal of the day's march, for the salt lake marked in Mr. Johnson's map. Several times a mirage deceived us by imitating a lake; at last we reached the very spot where it was marked to be, and there found but the bed of the lately-dried-up lake. The lake seemed to have been three miles across, but very shallow; doubtless it fills in the early summer, receiving the drainage of some of the southern and of the western portion of the plain. By evaporation it becomes saline, and as the season advances dries up altogether. This wide plain, dry and bare, and exposed at noonday to rays of the sun untempered by thick air, is well calculated to produce mirage, which depends on the differing temperatures (and therefore differing densities) of different horizontal layers of air. The first time I crossed it, a striking and somewhat puzzling mirage prevailed. Eastwards the plain seemed to end in a boundless ocean, in which were strange-shaped islands, some bearing masses of snow; the inverted image of them was reflected from below, and a repetition of the double image beneath that. As one stoops low to the ground the ocean seems to ripple to but a hundred yards from one; sometimes the appearance of water was very distinct to us as we were seated, but disappeared on our rising. From other points the mirage made the plain look like a beautiful lake with steep banks, backed by high snowy mountains.

The area of the plain itself and of the inner slope of the surrounding mountains makes an isolated basin of drainage.

In the western part the waters flow towards the temporary lake above mentioned, some very probably drying up on the way to it; in the eastern part they go to the larger lake marked on the map, which has, I believe, been viewed from a distance by some member of the G. T. Survey. The isolation of the basin was the last considerable change that occurred; that a lake, whether of enclosed drainage or communicating with the sea, existed for a great length of time, is proved by the composition of the ground; the whole soil that covers the flat *has been deposited in a lake.* Mr. Johnson on his journey recognized the fact that the plain had been a large lake, and a close examination of the substance of the ground clearly proves it, as will now be seen. The small differences of level that have been spoken of resolve themselves, speaking generally, into a higher tract and a lower, with 20 feet, or less than that, of difference between them; there is also an unevenness of the higher plateau, made by watercourses having been cut through it as the surface-water drained down to the lower tract. This is extremely like what we saw in the Salt Lake plain of Rupshu; but there is a yet more important resemblance in the substance of the plateau. Small cliffs at the edge of it, or the minor ravines cut into it, show that below, as at the surface, there is a whitish or a drab clay; some of this is a massive clay, some of it is laminated; some of it is calcareous. Interstratified with the clay is sand, some so fine as to be impalpable. Again, there are laminæ of flat water-plants, and in places a mass of these plants some inches in thickness, with earth intermixed. These phenomena, repeated whenever one gets an opportunity of seeing into the substance of the plateau, leave no doubt in my mind that the strata were deposited in a still lake. The sections only enable us to say this of 20 feet in thickness of the material; how much deeper the lake deposits exist—to what extent the levelling of this wide flat surface is due to a filling up by such deposits—we have at present no means of ascertaining. The lower tract has stones on its surface from a quarter of an inch to three inches

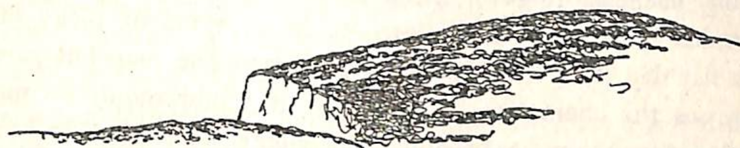
across, most of them angular or nearly so, some rounded, of limestone or of sandstone. That, in part at all events, this lower tract has been denuded out of the higher plateau, is proved by an outlier of the clay and plant-beds left in the lower space at a considerable distance from the rest. It is probable that the lower plain was cut out both by the water of the lake, acting at its margin, when it had already much diminished and had become localized in the lowest parts, and later by streams, which widened their way by denuding laterally. At one part, over a considerable space, was a curious result of the denudation of the substance of the plateau—a strange form of the portions of the clay which were left; this I saw four or five miles south and south-west of Tsothang, over a tract of some square miles. The rough sketch shows the form in question. There are mounds of a peculiar shape, with a steep and a sloping side, the steep face always looking in one direction, which is 15° south of west. The mounds are from two to twelve feet above the hollows between them. I have been much puzzled to account for these



OUTLINES OF MOUNDS OF LACUSTRINE CLAY FROM TWO TO TWELVE FEET HIGH, IN LINGZHĪTHANG.

forms; their direction is most probably to be connected with the direction of the prevailing strong winds with which it about coincides; one feels inclined to speculate on the possibility of the wind itself, by drifting fine sand, to act on a surface already made irregular by stream-denudation, having carved them thus. The lacustrine deposits hitherto described are clearly those of the deeper water of the former lake; we will now go to the edge of the plain to see if any marginal traces of the water of it can be found. Approaching the irregular Lokzhung Range, we see that the light-coloured flat of hard clay

ends off with a marked boundary against ground sloping slightly upwards; the slope is at an angle of about 2°. At first the soil of this incline is clay, with stones strewn over it; farther up is sand, more or less in lines; and farther up still the substance was all sandy or shingly, with slight ridges in it; these are clearly the littoral deposits of our lake. Then as we go up still higher, and especially as we examine the ground on the north-west of Tsothang, we meet with complete beaches, parallel curved shingle-banks; some of the shingle was cemented by carbonate of lime dissolved from the stones themselves, which are of limestone. Beaches of this ordinary kind are seen up to 150 feet above the flat plain; at a higher level still there are deposits the mode of whose occurrence will be understood from the next diagram. There is a line of rocky cliff between 50 and 100 feet high; at the foot of it are distinct beaches; above



SHINGLE-BEACHES AT THE FOOT OF A CLIFF AND A MASS OF SHINGLE ABOVE IT. EDGE OF LINGZHĪTHANG.

it is a mass of rounded stones, forming the top of the hill, which may be as much as 300 feet above the plain at Tsothang. We have, therefore, in the intermediate or lower beaches, evidence of the lake having at one time had its shore along the edge of these Lokzhung Mountains; in the upper masses of shingle, evidence of a still higher water-level. Of this we will try to understand the full bearing as we go farther on and become acquainted with the form of the ground in the Lokzhung Range and beyond. Hitherto we have looked only on the north side of Lingzhīthang for shore-marks, but we must not forget to trace them, if possible, on the south. Both times that I came to the southern edge—going and returning—I was under disadvantages;

the first time night was falling, and it was impossible to make any examination; the second, a storm of wind and snow came on which much hindered it. This, however, I saw; that the ridge, of a height of about 300 feet, which the path crosses as one approaches Lingzhīthang from the south, has at its upper part a conglomerate of stones of the two kinds of limestone that occur near; the conglomerate is in beds which slope northwards 35° or 40°. It reaches also on to the northern side of the ridge.

Leaving for the present further discussion as to the history of the lake, we will go to the next division of the region, and afterwards return to the subject.

THE LOKZHUNG MOUNTAINS.

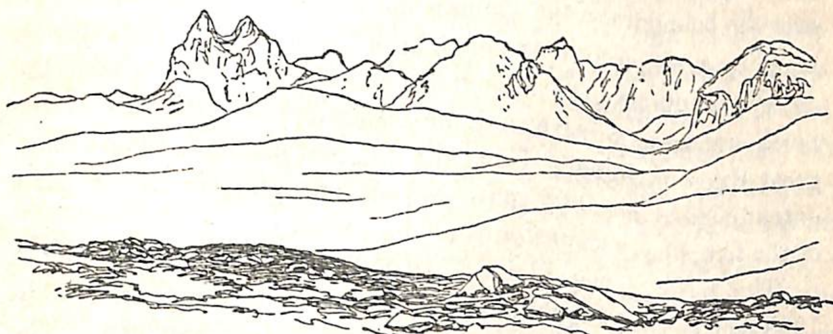
These are a complex range of mountains running in a west-north-west and east-south-east direction from the western to the eastern bounding-ridge of the Plateaus. Its length is 60 miles, its width from 15 to 20 miles. It is a region of rocky hills with flat dry stony valleys between them. The map but partly expresses the character of this range; it would require a more detailed survey than has been made for their complications to be represented. It is not one range with branching spurs, but it may be spoken of as a tract occupied by parallel hill-ranges (running from west-north-west to east-south-east) of various outline, according to the kind of rock each is composed of; these ranges are broken or cut through by valleys which lead from the southernmost edge of the hill-tract towards the north-east; the breaks in the different ranges are not opposite to each other but are in échelon, so that each valley zigzags, now flowing south-east between two ranges, now breaking through one to the north-east, again turning south-east, and ultimately leading out to the Kuenlun Plains.

I have put in a sketch of one of the widest of the stony valleys among the Lokzhung Mountains; it leads up to the western range, in which is a conspicuous peak of 21,000 feet, a peak too steep to bear snow, except a little in the saddle-like hollow.

None of the valleys drain out to Lingzhīthang; the rounded

ridge which is about 300 feet above that place, that bears coarse shingle on the top, makes the watershed between Lingzithang and the Kuenlun Plains; for this is continuous, while the higher, the rocky, ridges behind it are broken through.

I said that the different ridges vary in character according to the rock they are composed of. There is an older encrinitic limestone, dark grey in colour, which usually is dipping high; this makes hills not the most rugged. Ferruginous sandstone, and



A WIDE VALLEY IN THE LOKZHUNG RANGE.

above that a limestone that contains hippurites, lie unconformably on the older limestone; these sometimes make isolated hills of various forms, sometimes, with a high dip of the strata, make a rugged serrated ridge. Some portion of this newer formation gives, in the weathering, a reddish-brown surface; other portions, of a light-coloured limestone or crystalline marble, make conspicuous white rocks.

The path traverses this range from Tsothang to Thaldat; it takes two days' march in and out among the mountains to go through them. The road does not follow one valley, but passes from one to another by crossing low necks. More than one of these necks which I crossed were accumulations of rounded material—coarse shingle—like what composes the summit of the rounded ridge behind Tsothang. From one of these was a fall of 100 feet on one side and 200 feet on the other, but it is not certain that the whole mass was made of shingle; it may be that there was rock within.

THE KUENLUN PLAINS.

This, as was said above, is the name I give to that part of these uplands which lies between the Lokzhung and the Kuenlun Mountains.

The place called Thaldat is on the north-eastern edge of the Lokzhung Hills; the ground slopes gently down from it, for 200 feet of fall, to the flat of the Kuenlun Plains. To the south-east the boundary of the Plains is not seen, except that from a commanding position we may get sight of the summits of some distant snowy mountains. The mountains which bound the Plains on the north are both massive and lofty snow-topped hills, part of the great Kuenlun Range. From the different mountain ranges long-extending but not lofty spurs project, separating the various parts of the irregularly-shaped area of the Plains.

The level of the Plains is 16,000 feet above the sea, that is 1000 feet below Lingzhithang. The surface is sometimes of hard clay, sometimes of a softer mixture, half sand, half clay. The variations of level are greater than any we met with in Lingzhī-thang; from one upper plateau there is a fall of 60 feet to a lower watercourse plain, and numerous small ravines, cutting through nearly to that depth, make very irregular ground. Partly from these ups and downs and partly from the yielding character of the dry loamy earth (which certainly increased the labour of walking by one-half), we found the way very laborious; for here also, one must recollect, any increased exertion immediately makes the rarity of the air to be felt. The upper plateau is in parts covered with fragments of a brown calcareous cake, an inch or less in thickness--biscuit would be the more descriptive word. At the lower levels there are shallow saline lakes here and there. The flats of greatest extent are those to the north-east and east from Thaldat; from these many ramifications extend; a branch runs up between spurs (by the place called Yangpā) to the Kuenlun, with a width of some five miles; this again branches to the west and opens out into that most saline portion of all (which we shall examine later) between Patsalung and Londing. At the

head of some of these branches, the plain, narrowing, changes into a slightly sloping alluvium of streams that come down from the Kuenlun Mountains; higher up this changes into steeper-sloped alluvial deposits in among the spurs of those mountains. These are part of the foremost ridge of the Kuenlun; it is a bold dark line some 4000 feet above the plain; behind it is the lofty snowy range that reaches to close on 22,000 feet. On the southern face of the highest ridge the easternmost branch of the Kārakāsh River has its source.* The drainage of the Plains does not communicate with that river; there is a barrier which we shall presently look at. The Eastern Kārakāsh, at its nearest point, flows in a valley between the north-west corner of the Plains and the foot of the great mountains; here it is 15,000 feet above the sea, 1000 feet below the plain-level; there is a steep descent to it in a narrow side ravine. The Eastern Kārakāsh Valley is here a few hundred yards in width; it slopes down to the west-north-west at an angle of about 3°. On the north it is bounded immediately by the main Kuenlun chain; on the south by spurs from a more southerly, nearly parallel, line of mountains. These southern mountains are of slate and shale, and the same rock extends some way up the slope of the Kuenlun opposite; but at this part the ridge itself of the Kuenlun, and farther east the whole height of the slope, are of granite; the road on its descent from the Plains to the Eastern Kārakāsh Valley is about on the junction-line of the two rocks. The Kuenlun Mountains make a continuous ridge, with some higher peaks covered with permanent consolidated snow-beds; these tower 6000 or 7000 feet above the valley; just north of the high peak at the corner, a glacier, pure white, comes down in a hollow to a level some 3000 feet lower than that of the ridge. All is, as usual, bare; above are surfaces steep but not precipitous, below are taluses and other stony accumulations; down the valley rocky spur after spur from both sides comes forward until the

* Mr. Hayward in his explorations found that this was not the longest branch of the Kārakāsh; although, therefore, travellers, Eastern and European, had called it by that name, the branch which Hayward discovered has now come to bear the name Ķārakāsh; the first I shall distinguish as the Eastern Kārakāsh.

curving of the northern ridge with its high mountains shuts in the view.

Having thus considered the general form of the ground as far as I myself have seen it in this direction—for, after going a few miles down this Eastern Kārakāsh Valley, I turned back towards Ladākh—we will return to the Kuenlun Plains and examine them with the same attention that we gave to Lingzhīthang.

I have explained that the various parts of the flat communicate with each other, for they are separated only by ramifying, not by interlacing, hills. The substance of this flat consists of interstratifications of white or drab clay with sand and some calcareo-argillaceous flakes—such as we saw on the surface broken up in a biscuit form. This is quite parallel to what we found in Lingzhīthang; it is clearly the deeper deposit of a lake; the biscuit-stone frequently, or generally, has impressions of plant-stems, and we sometimes find the same in layers in the clay. We conclude then that the small lakes scattered over are but the remnants of one that covered all the flat. To continue the same kind of investigation, we will now look along the foot of the lines of hill, at the edge of the flat, for those marginal evidences of a lake that our eyes or minds have now become accustomed to. At various places we see these as clearly as could possibly be desired. About Thaldat, though there is no beach proper, there is found a sloping littoral deposit of clay with small angular stones. Some fifteen miles north-north-east from Thaldat (at the farther side of that stretch of flat), when about a mile short of the hills, we reached again to the littoral deposit of the old lake—clay, with small stones, unrounded and half-rounded, within it. Then, right at the foot of those hills, we came on lines of shingle-beach, of unrounded and slightly-rounded stones, at successive levels up to 80 or 100 feet above the plain; these beaches stretched from spur to spur of the hill, sometimes connecting two headlands as by an isthmus of shingle, with a hollow left between it and the line of the hill. At the extreme point of this branch of mountains a high bank of beach connects it with an isolated hill beyond; again, at the north side of the

branch, was a great accumulation of shingle, extending both in length and width towards the flat, first in ridges and afterwards in a flatter form, constituting a subaqueous littoral deposit, some of which has been cemented hard by carbonate of lime.

Now again come the questions—what made the lake? where would have been the outlet? is there any sign of a dam?

In trying to obtain facts in answer to these questions I wished for means of getting more accurate levels than I was able to obtain; I wanted both appliances for this and time for using them. But as far as I could judge by eye and by Boiling Point observations, the outlet of all this branching flat was once to the Eastern Kārakāsh Valley.* Further, I saw that the cause of the stoppage of this outlet, the dam which made the lake—the lake, I take it, which covered all the flat—also existed here. It is possible that at different times the dam may have been at different spots, and even may have been of different kinds. If, as is possible, the lake existed during part of the glacial period, then a glacier itself, with its moraines—perhaps a glacier occupying the head of the Eastern Kārakāsh Valley—may have formed the dam. However that may have been, there is now, at the spot we are speaking of (four or five miles in a direction 30° east of south from Brangsā encampment on the Eastern Kārakāsh), a neck between the Eastern Kārakāsh drainage and that of the basin of the Kuenlun Plains; this neck is made by two alluvial fans, from opposite sides of the outlet valley, coming down and meeting. I do not say that this particular fan-made neck is high enough to account for the highest of our beaches, but I both believe that it acted as a dam at some stage of the lake's existence, and also that here or within a short distance existed each and all of the barriers of the lake on this side.

We have now come to a corner of the Plains which I have not specially described, but it shows some points of peculiar interest. From the fans that make the neck, southward for more than

* Mr. Johnson had inferred that the outlet of the Soda plain (which is the nearest branch of these plains to the spot in question) had been into the Eastern Kārakāsh River.

20 miles, is a comparatively narrow flat (from one to three miles in width) which communicates on the south-east with the wider plain. We descend into this from the neck, and at once come on lake-deposits. We see flaky clay, the deposit of still water, and upon this we see parallel curves of beach reaching across the valley, which in succession shut off the end of the lake (at its different stages of level) in that northerly direction; the lake at one time extended beyond them, and deposited some clay-beds, and later, on a recession, caused by a lowering by drying, of the waters, the beaches were formed in ribs upon it. Side valleys that join in on the west were once arms of the lake; the marginal indications extend for some distance up them; but of one that I saw the mouth had been closed by a bank of shingle that had formed right across it. Where one of these valleys comes in the old high margin of the lake is beautifully shown out by the beaches; these consist of flat stones, with their edges rounded; angular pieces have lately fallen from the cliff, but to distinguish them from the shingle matter is not difficult; the beaches are at various levels, up to 200 feet above the lowest part of the valley near. Here the downward succession of deposit is shown with great completeness; in the uppermost 120 feet, there are steep slopes of beach; below are flatter, shelving, beaches; lower still the ground is nearly flat, composed of dry mud and stones; again lower is a flat all of dry clay. The level of this hardened clay-bed of the lake is of course below that of the neck made by the two fans, but I think that the level of the highest beach is above it. This neck then, considered as a dam, would not account for the highest rise of the waters; as before said, other dams—of ice or moraine—probably came into action near the same spot.

At this part of the Plains we are, I believe, in the lowest portion of the whole basin. Being nearest the original outlet of the valley that preceded the lake, it would naturally have the lowest level, unless disproportionately raised by the lake deposits. I believe that on the waters lessening by evaporation they receded into this corner, and for long occupied this space in a narrow lake, during which time a concentration,

and ultimately a precipitation, of the saline materials they contained and were being supplied with, were going on. For this tract is the one of all where there is the greatest deposit of salts. At other parts, indeed, there had been seen a thin cake, or else an efflorescence, of salts, sometimes of carbonate of soda and sometimes of sulphate of magnesia. But here, over many square miles, is a thick bed of salt which I believe to be chiefly sulphate of magnesia. There are three or four forms in which this occurs; first mixed with sand to a depth of many inches, but with a thin cake of unmixed saline matter at the surface; as one passes over this, the foot, crackling through the cake at top, sinks deep in the soft saline sand; secondly, a powdery form of the white salts, this being probably a changed state of the material to be mentioned next; lastly, a hard crystalline colourless cake of the salt; to what depth this may reach I do not know, but as much as 10 feet of thickness have I seen. The surface of this cake is often irregular, in hard rough narrow ridges, two or three feet high, of the consolidated salt, with the soft powdery salt, or the mixture of earth and salt, between them *; these may have been forced up by the frost at the margin of the lake, in the same way as the frost-margins are made which we saw by Pāngkong Lake; for I observed such a line of ridge along the edge of one of the present pools of water.

The water of the small lake now remaining, though very saline, yet was frozen when I saw it on the morning of the 6th September; for the cold had even then begun to be intense. Where the flat widens out, and connects eastward with the rest of the Plains, its surface bears much less of the salts.

GENERAL OBSERVATIONS.

We have now considered these uplands in their separate divisions of the two plains and the dividing mountains. There are yet some observations to be made which will refer more generally to the whole tract.

First we will recapitulate the facts which have been more or

* It will be understood that I am not speaking of common salt, but of the same compound as before.

less detailed as to the form of the ground. A nearly but not quite complete barrier of mountains encloses the two table-lands, one 16,000 feet the other 17,000 feet high, which are themselves separated from one another by the Lokzhung Range. Of what is *outside* this mountain barrier we do not know equally well for all the sides. On the north Mr. Johnson has shown how the ridges and the valleys lessen in height till the plains of Khutan are reached. On the west Mr. Hayward found that the mountain-ridge is succeeded by the main Kārakāsh Valley, and that again by the high ground, partly mountains, partly table-land, that extends towards the Kārakoram and Suket Passes.* On the south is the mass of rounded hills which we dwelt on in the beginning of this chapter. There remains the eastern side. Here the ground has never been at all explored, nor even reached, by any European, nor, till some distance beyond, by anyone from whom information could be got. I believe there to be a bounding ridge of mountains on the east as there is on the west. Beyond that, I heard from the mouth of a Ladākhī who took the route from Rudokh to Khutan, there is a long valley somewhat corresponding to the Kārakāsh Valley on the west.†

So much for the form of the ground. Next, a last word on the formation of the lake or lakes, for now that we have acquired a general idea of the ground we shall be able better to judge of the weight of the various facts, bearing on this subject, that were recorded. At the north-west corner we found an opening for former drainage, between the Kuenlun Mountains and spurs from the western ridge; this opening is now, to a certain extent, closed by alluvial accumulations, and was formerly in all probability obstructed to a still greater—perhaps to a much greater—height, either by similar deposits or by glaciers and moraines, glaciers at that time being more numerous and larger than now. At the extreme south-west corner I have been informed by Mr. Shaw (from his own observations and on the authority of Mr. Reynolds of the

* Dr. Cayley explored some of this ground and found a route which in some respects is one of the best to follow in going from Ladākh to Yārkand.

† My informant told me that to traverse this route from Rudokh to Khutan takes about eighteen or twenty days.

Survey) that streams which flow down to the Shāyok interramify with those that flow into Lingzhīthang, that the watershed between is quite unmarked.* That here, too, or else somewhat lower down, existed a dam, in nature similar to the one observed or to those inferred, for the other end, I have but little doubt. Now, on the theory that the lake or lakes were dammed at these two points, we must allow the dams to have had a height at least equal to the highest beach or margin-mark. Some of the highest of the shingle observed is by the Lokzhung Mountains, *between* the Lingzhīthang and Kuenlun Plains; indeed we saw that the watershed between these two drainage-basins (as they are at present) is made by a ridge of a height of about 17,300 feet (300 feet above Lingzhīthang), *which bears or is made of shingle at its summit.* I can then but infer that at one time, when the two dams locked the waters to a great depth, there was *one lake* stretching from near the Chāngchenmo Watershed to the Kuenlun Mountains, which made, over what is now Lingzhīthang, a wide sea, 60 miles by 20, which reached through straits among the various ridges of which the Lokzhung Mountains are composed, and which spread northward over what are now the Kuenlun Plains, penetrating far between the mountain spurs to the very base of the Kuenlun Mountains. At this stage there was *no watershed* between the Indian and the Turkistān drainage; or if there were one it could only have been the higher of the two dams that confined the lake; it is possible that each dam alternately became the watershed, the waters of the lake sometimes going one way, sometimes another; and it is just possible that at some period the waters simultaneously flowed out both ways. The sinking of the surface of the water may have first begun by a lowering of one of the dams, but must at the last have been due to a change of climate, the present ratio of supply to evaporation of water not now availing, while formerly it must have availed, to spread the waters over the enclosed drainage-basins. At a stage in the sinking of the water the one lake must have become two. The waters

* This is not so expressed on the map; I had no material from which it could be drawn.

themselves, by their currents and their shore-action, had accumulated deposits along the line of the Lokzhung Mountains, which, on their retreating, became bars separating the two watery tracts, and have since become the watershed between the two enclosed drainage-areas.

There is another subject—the extent to which this region can support animal or vegetable life—about which the little I have to say may be worth telling, since the place is so seldom visited. In the description hitherto little has been spoken of but earth and stones and rocks; but in this I have been guilty of hardly any omission, so few are the traces of either animal or vegetable life. Vegetation exists but here and there; generally every 10 or 15 miles is to be found some *burtse*, or Eurotia, the plant that serves for fuel, though at one halting-place moss is obtained in its stead, and at another neither *burtse* nor moss can be got. Pasture is still rarer; on leaving the last halting-place in the Chonglung branch of the Chāngchenmo Valley we had to pass over 60 or 70 miles before reaching any grass; the first find was at Lokzhung, a halting-place in the middle of the mountains of the same name. On the Kuenlun Plains grass is equally scarce, and it is only when one gets well into the Eastern Kārakāsh Valley that this cause of difficulty in keeping one's baggage animals alive disappears. Of wild animals one would think from the foot-prints that great numbers must live in the plains and the surrounding mountains; but one sees few, and on reflection it appears that the many foot-prints are the work of a comparatively small number of individuals, for in this country a mark made may stay unobliterated for years. I saw Kyang, the Wild Ass, but only singly, at Thaldat, which is a watering-place of his; a track had been made straight to it for two miles, beaten and cleared of stones by continual passage. Hare also are now and then to be seen, and foot-prints of Antelope were observed at various places on the plains. Beyond, on the Eastern Kārakāsh, Kyang, and Antelope, and Hare were more plentiful. A beast I had not before seen, was the wild yāk; him I met among the Lokzhung

Mountains—a solitary bull—an animal in form exactly like the domesticated yāk, but of larger bulk; from his sides hung long hair, but his back was comparatively bare. At first, on seeing us, he went away with a short quick trot, but he afterwards broke into a heavy lumbering gallop. It has been doubted whether the domestic yāk comes from this wild one, or whether the wild yāk may not have sprung from some that have escaped from the camps of travellers, for every now and then these beasts of burden are overcome, and, unable to carry their loads, are relinquished; these may, perhaps, recover, and, finding subsistence on some scant pasture, live and reproduce their kind in a wild state.

There is one other phenomenon that deserves a moment's attention before we leave this interesting ground. There are at least two instances of *ice-beds*, or, as some have called them, *snow-beds*, occurring in the plains. I prefer the former name as being more truly descriptive, although at first sight they look just like beds of snow. Colonel H. Strachey described two or three of these in Rupshu and Pāngkong, but gave no explanation of their origin. Mr. Johnson mentioned the one at Thaldat, which was the first I ever saw. On the plain, a mile or two from the nearest hill, a space about a mile long and a quarter of a mile wide is occupied by the ice-bed; it lies in the bed of a stream, with the water flowing beneath part of it; the greatest thickness that I saw was four feet; some of it was like *nevé*, and some was more icy. A similar bed which I saw in Rupshu (one of those noticed by Colonel Strachey), I find described in my notes as being made in great part of layers from a quarter inch to one and a half inch thick of prismatic ice, the prismatic crystals being of course at right angles to the surface of the layers; there, too, was some that is described as like *nevé*. At other parts, again, the length of the prisms (and therefore the thickness of one layer of ice) was as much as eight inches.

I think that these ice-beds are the unmelted ice of the streams, formed especially in spring, when the successive rising levels of the water that flowed from the melting snows would make layer after layer of ice, as the still severe cold at that time

froze the surface at night, until a thickness had accumulated too great to be made to disappear by one summer's sun, and so the bed had become permanent. The limit to its vertical increase would be the impossibility of the water reaching to a higher and higher level beyond some certain height; only as it wasted away, as in summer it must waste, from the sun melting its upper and the stream its lower surface, would, when the mass of ice settled down, additions again be made to it from above in the same way as before. It may not unlikely happen that snow fallen on the surface sometimes becomes enclosed and consolidated by the overflowing water.

CHAPTER XVI.

BALTISTĀN.

THE BALTĪS — SKĀRDŪ — SHIGAR — BĀSHA — BRĀLDŪ — RONDŪ — DEOSAI — THE GAME OF POLO.

IN the course of the last five chapters we have gone over the whole of Ladākh, or if some few corners have been left untouched, it was either because their characteristics were not different from those of a neighbouring part that was described, or else they were places which I, not having visited them, was unable to write of from personal observation. Now, in continual pursuance of the plan laid down, we must proceed to the north-westerly portion of the Indus basin, and first to the district, formerly the kingdom, of Baltistān.

The reader will remember the character of that lowest part of the Indus Valley which was described under the heading of Central Ladākh—that which included the neighbourhood of the village of Dāh. We there found the river confined in a narrow rocky gorge; occasional flat and strait spaces supported the cultivation of a small village; above rose rocky mountain-spurs which connected farther back with a lofty range. Thus, or sometimes with a less degree of confinement, the valley is continued down through Baltistān. The path along it is sometimes on a piece of sandy alluvium, sometimes over the great rugged blocks of a talus, and sometimes on the face of a cliff washed at the base by the river, the road being carried on precarious-looking timbered galleries fixed into small projections of the rock. The scenery is always of stony expanses and rugged rocks; only at every few miles a pretty village at the opening of a ravine pleases one by its thick crops and the foliage of its fruit-trees, which here, as we descend the valley, more and more flourish. The Shāyok Valley, which

runs nearly parallel to, and at levels corresponding with, the Indus Valley, I have not visited in this its lower part; from Dr. Thompson's description it seems to have much the same general character as that of the Indus, but perhaps with greater variation in width. The two rivers unite by Kiris. A few miles below is Skārdū, the chief place of Baltistān. I shall describe the neighbourhood of Skārdū, and some other portions of Baltistān that I am familiar with, in some detail, but before doing so I wish to give a short account of the people of that country.

THE BALTIS.

The country itself is by the Ladākhīs called *Baltī*, and a native of it is called *Baltī-pā*; but the Kashmīrīs and other neighbours use the word Baltī as an adjective, and call the country, according to the Persian form, Baltistān, or the place of the Baltīs, and this mode I shall follow.

As has before been said, the Baltīs are Muhammadanised Tibetans. They are quite of the same stock as the Ladākhīs, differing from most of these latter in physical characters little more than some Ladākhīs differ from others. By becoming Muhammadan, however, they have gained for themselves some other differences in look. The Baltīs have parts of the Turanian physiognomy marked. The high cheek-bones are generally noticeable, and the eyes drawn out at the corners. Their eyebrows are often brought near each other with a wrinkling of the brow; but the nose not so often has the depressed form as it has with the Bhots (that is, the Buddhist Tibetans), nor are the Baltīs quite so scantily bearded as these are. The Baltīs have disused the pigtail, and they partly follow the Muhammadan custom of shaving the head, only they leave long side-locks growing from behind the temples, which are sometimes lank, sometimes thick and curly, and sometimes plaited. In stature the Baltīs are less thick-set than most Ladākhīs, and taller; this difference may be the effect of local circumstances; for in most parts of Baltistān there is a less severe climate than in most parts of Ladākh, and the life led is somewhat easier; and it

is to be noted that of Nubrā, where the people (classed with the Ladākhīs) resemble the Baltīs in figure, the physical circumstances approach those of Baltistān. The Baltīs, though wiry, are not equal to their neighbours of Ladākh in carrying loads; especially they move slower with their weights; but they are particularly good in carrying a load over difficult ground where one would think a laden man could not pass. They always carry about a hair-rope or else a leathern thong, fixed to a wooden ring, for slinging their loads, and very commonly carry a conical basket at their backs for the same purpose. The dress of the Baltīs is different from that of the Bhots, but it is of the same material, or perhaps of a more loosely-woven cloth. Instead of the large loose coat they wear one reaching but a little below the knee, and they wear short pyjamas. They carry one or two wrappers for their waist and shoulders, these sometimes of a check pattern. For the head they have a small round cap, which they wear at the back of the head, and the headmen of villages bind a woollen cloth pagrī or turban over it; people of higher rank will have one of white calico or muslin. The people go barefoot a good deal; but they carry with them, for wear in the colder parts, boots of soft leather, often of goat-skin with the hair left on and worn inside. In disposition the Baltīs are good-natured and patient. They are not so cheerful as the Bhots, but they are not without some humour. They are less slow in comprehension than the Bhots are, and are somewhat more up to the ways of the world —less generous, more eager in getting.

In adopting Muhammadanism the Baltīs dropped the custom of polyandry, and have since to some extent followed polygamy. And this although the same economic reasons for polyandry hold in Baltistān as in Ladākh. The area of cultivation is closely limited; there are no means of support within the country for an expanding population. Still with the new religion the customs prevalent among Muhammadans in other parts of the world were adopted, and the old prudential arrangements set aside. I do not think that with the poor people—the mass of the population—polygamy is common, but there is no customary restric-

tion about marriage, and they are in fact betrothed as boys and girls.*

The result is that Baltistān is crowded; the population is overflowing. Happily they are a people more likely to fare well as emigrants than the Ladākhīs; for the heat of some of the valleys they dwell in has fitted them to endure the warmer climates that the search for food was likely to lead them to. Accordingly, colonies of Baltīs have been made in several countries, where food is more abundant, and frugality and industry (which are characteristics of the Baltī emigrant) can get their reward. Thus in the Yārkand country is a large settlement of these people; their occupation, I have been told, is in great part the raising of tobacco. In Kashmir some are settled, and to Jummoo even they find their way. Some hundreds, again, get a livelihood as soldiers in the Maharaja's army, in which has been formed a regiment of Baltīs, a regiment for which has been adopted the Highland kilt and a head-dress that must have been taken from some picture of our grenadiers of a century and a half back. But at present the great outlet for the Baltīs is the British territory, where, at many places in the hills, works are going on—such as road-making and barrack-building—at which they can earn good wages; or better, by taking small contracts, gain a profit as well. It is common for the Baltīs, in parties of half a dozen or so, to find their way through Ladākh to Simla, taking with them a load of dried apricots, by the sale of which they provide food on the road and perhaps a little purse at their journey's end. Joining a gang of their countrymen already at work (for by this time there is established a regular though slow correspondence through those going and returning), they will work on steadily, until, after three or four years may be, they have saved what will carry them back to their country and keep them for awhile, and enable them to do something for those they had left behind. Then, investing these savings in the goods most in demand in Baltistān, generally copper cooking-pots, they will

* With polygamy has been introduced the other Muhammadan custom of restraint of women from mixing freely in society.

load themselves to the utmost they can carry, and start on their two months' journey home. There the travelled Baltī takes his ease for a bit, being able to obtain the best produce of his village, till diminishing resources warn him again to look abroad.

In spite of all this emigration, however, there remain in the country more people than its produce can well provide for. The land, or the interest in the land, becomes minutely divided; the workers on it cannot get a full meal; the result is a poor, ill-clad, and unhealthy population: certainly the Baltīs are much less robust and healthy than the Ladākhīs.

It is a curious thing that the Baltīs belong mostly to the Shīa sect of Muhammadans. As to their first conversion to Islām I could hear nothing; but some teachers are remembered—four brothers, it is said, from Khurāsān—who made "good Muhammadans" of the people, who before were but nominally Muhammadan. It may be that these four missionaries were Shīas. There is among them yet another sect division. A number of the Baltīs call themselves "Nūr Bakhsh," which name (evidently taken from the name of some spiritual leader) implies a slight difference from the ordinary Shīa. This consists in the mode or order of prayer; the Nūr Bakhsh follow one who stands in front, which, apparently, the other Shīas do not; but in the great matters of difference between the Sunīs and Shīas the Nūr Bakhsh are with the latter.

Until lately Muhammadanism was advancing gradually among the Bhots. The line dividing the Muhammadans and the Buddhists was travelling south-eastward. Moorcroft remarked, in 1821, that about Kargil Muhammadanism was advancing, and that there was every reason to suppose that before long Ladākh would be entirely Muhammadan. Dr. Thompson, who travelled over the countries in 1847–8, observed that in the Shāyok Valley an uninhabited tract had acted as a barrier between Musalmān and Buddhist, but that on the Indus and south of it Islām was gradually, though very slowly, extending eastward. Now, however, the advance is stayed. The countenance and encouragement which the Maharaja has shown and given to the Buddhist

religion, as a branch of his own, has been enough to counteract the tendency that there was to Muhammadan conversion.

Some villages of Baltistān, and some parts of villages, are inhabited by the quite different race of Dārds, who are called by the Baltīs *Brokpā.* These have yet to be described; I here only mention this fact in their distribution. In a few places, as at Bāsho, the two races have intermarried.

As to the language of the Baltīs I can say nothing in detail; it is but slightly different from Ladākhī; the two nations understand each other's talk.

SKĀRDŪ.

Baltistān is composed of enormous mountain-chains, or masses of mountain. Of these, only a study of the map will make clear the direction. As to height; while 18,000 and 20,000 feet is common, there are, in the north-easterly parts, peaks of 25,000 and 26,000, and one above 28,000 feet. These give rise to the largest known glaciers out of the Arctic regions. Of the valleys, the most important are the Indus Valley, and the valley of the Shāyok that joins it, and that of Shigar, which combines with the united valley at Skārdū.

At this meeting of the waters, the valley (which, in the course of the Indus, both above and below, is extremely narrow) is widened. There is left between the mountains a curving, crescent-shaped, plain, in length 20 miles, in width varying from one mile to five. In the widest part are two isolated hills, about 1000 feet in height; between these flows the Indus. Immediately below, it receives the waters of the Shigar River, and with their addition becomes a river of great speed and volume; in summer time it flows, even through this level part, with a velocity of six miles an hour.

By far the most of the Skārdū plain is uncultivated; it is a waste of sand and stones: there is first the space in flood-time covered by the waters; then, over some square miles, is blown sand, hopeless for cultivation; last are the stony tracts belonging to the alluvial fans of streams that flow down from the southern

range of mountains. Cultivation, however, is limited more by the supply of water than by the barrenness of the soil; for where irrigation can be applied, very hopeless-looking ground will yield crops. The water of the large rivers is seldom available, but the side streams, coming from a high level, can be led over the alluvial plateaus; these, then, make real oases, though of small area, surrounded by the yellow sands; plentiful crops come up, and innumerable fruit-trees flourish in them.

Bounding the valley on the south and south-west, curving round with its form, is a grand line, or broken wall, of mountains, rising into high-peaked rock-masses. This crescent of hills extends from one narrow gorge, whence issues the river into the plain, to the other lower gorge, where the valley is again closed to the view. On the north side the mountains are more broken. One line comes from the north-west, and ends in a great rocky mass just opposite Skārdū. Then comes the valley of the Shigar River, and, at its farther side, some low, broken hills, backed by spurs from very lofty mountains. The mountains are of bare rock; here and there only, on the upper slopes, is a little grass—a patch of thin pasture. In all parts they are steep; in great part they are precipitous. High up on the southern hills, in hollows surrounded by great cliffs, lie small glaciers; these for the most part are not connected with perpetual snow-beds, only some snow-taluses rest upon them and against the cliffs; from one of those in sight, however, a long mass of perpetual snow leads up to the summit. These mountains rise to 10,000 feet above the plain.

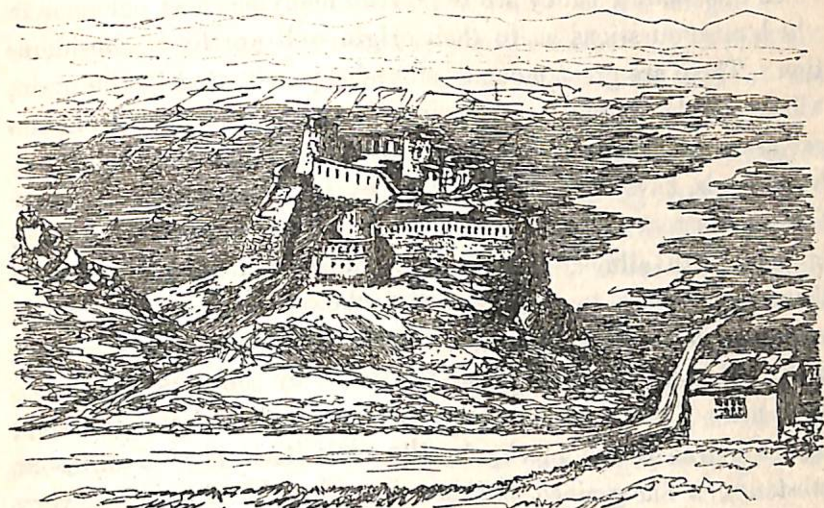
Near the base of the hills, from 1700 feet above the plain downwards, lie the villages. In the distance they are but little green lines and patches, either embosomed in the lowest hollows or crowning some platform that projects from the spurs. The space cultivated looks strangely small compared with the size of the great mountains; looked down on from a height, the fields seem to be minute garden-beds, and the groups of fruit-trees are like nursery plantations.

Skārdū itself is out in the plain, 7440 feet above the sea, just

at the foot of one of the two isolated rocks; this, rising to 1000 feet above, overhangs it. Skārdū is not a town; it is rather a scattered collection of houses and hamlets; the position of it is on an alluvial plateau, 150 feet above the river, which will therefore be about 7300 feet above the sea-level. The plateau extends from the foot of the hills to the rock; the river sweeps along the base, turned in its course by the same rock. Formerly the palace of the Rajas of Skārdū stood at the edge of the plateau, where the rock rises from it; now the ruins remain, little more than the foundations and some vaulted chambers. The palace was dismantled on the taking of Skārdū by Maharaja Gulāb Singh's troops. The rock itself was the stronghold; there was a fort built at the south-east end of it, at a part very steep and difficult of access; to this the Raja (Ahmad Shāh) retired on the approach of the enemy. Though the fort was a weak thing, yet its position was such that it could have been held for long if the whole rock had been properly guarded as well. On the higher part of the rock was a smaller fort, in a position very difficult to reach from below. But the Dogrā invaders were good mountaineers. One dark night they stole round from their position in front of the chief fort to the north-western corner of the rock, and, surprising the guards there posted, climbed the hill, and after a little fighting took the small fort near the summit. In the morning they began firing down, at an immense advantage, on the larger fort, and after two or three hours the Raja and his people took to flight and the place was captured. All the garrison (except a few who escaped across the river) were either killed or taken; the Raja himself became a prisoner.

This deed was boldly done of the Dogrās; it resembled somewhat, on a small scale, the capture of Quebec by the English. The strength of the position was such that it should never have been taken except by blockade and starvation. Soon after this victory the whole of Baltistān became subject to Gulāb Singh; in one or two places, as at Shigar, the minor rulers held out for a bit, but they were soon reduced, and the country was attached to

Jummoo. This happened about the year 1840. According to their custom the Dogrās built a new fort less dependent for its security on advantages of position; a sketch of this is given below, which shows that though it may be somewhat difficult to scale, yet it is not well protected against long shots.



DOGRĀ FORT, SKĀRDŪ.

The new part of Skārdū is on the plateau near the old palace; there is a small bazaar; the shopkeepers are, I think, all Kashmīrī who have here settled; others of the same nation are occupied in weaving pashmina, for which the pashm is brought from Ladākh. The houses here in Skārdū and in Baltistān generally are low flat-roofed houses, of stone and mud, with, commonly, a second story built over a portion of the first roof; this upper story (which is for summer living only) is not unusually of wattle; towards Rondū, where timber is more plentiful, it is built of thick boards. In summer time one sees the roofs all strewn with apricots, which are spread out to dry in the sun. The abundance of fruit in this country makes up in a great measure—with respect to the economy of the peasants—for the scarceness of the pasture and the consequent small amount of live stock that can be reared;

of goats or sheep one here seldom sees a large flock.* By the sale of dried fruit in place of the produce of flocks and herds are the luxuries from outside purchased or the cash necessary for payment of taxes acquired.

In this Skārdū Valley are to be seen many physical phenomena which raise questions as to their origin well worthy of consideration. These are great mounds, stone-heaps, situated in the plain, which are the moraines of glaciers that once protruded from the ravines on the south. These, as well as certain lacustrine beds at high levels, have been remarked on by Dr. Thompson and Major Godwin-Austen. Then the rock itself, 1000 feet high, is covered in parts with alluvial deposit and transported blocks, which of themselves suffice to show that the whole valley was once filled with such deposits to at least a depth sufficient to cover in that rock. Close to the summit of the rock, by the upper fort, is a large mass of granite, 30 feet across, smooth-polished and grooved; this is a transported block, for the rock itself is of a different substance, a fine-grained but massive (that is to say, not very fissile) mica-schist. This argues the presence of ice as a transporting power, in some form, when the deposits had covered in all up to that high level. At Kuārdū, on the right bank, the alluvial deposits occur at such a height as to imply a still greater depth of the sand and gravel. Another thing, not often seen, came under my observation. The beds of clay and fine sand, probably lacustrine, which form the plateau of the town are sometimes seen to be curved and contorted, even to over the perpendicular. This phenomenon, observed elsewhere, I have referred to the ploughing action of glaciers.†

All these things merit a minuter description and a longer discussion than I will here venture on. We now will leave the Skārdū Valley to look at other parts of Baltistān.

* Of cattle the Baltīs keep the common cow and the zo. Some of the villages have a bull yāk for breeding, which they keep in the cool upland pasture-grounds until the cold of winter makes the valleys endurable for him.

† Quarterly Geological Journal, vol. xxix., p. 460.

SHIGAR.

It may or may not be a fact of importance in physical geography—that is to say, the fact may imply a connection of deep causes, or may be the result of superficial accidents—that the line of the valley of the Indus as it flows north-west towards Skārdū is continued by that of the valley of the Shigar River as it *comes from* the north-west to join the former. The positions resemble those of the Indus Valley lower down, and of the Gilgit Valley which joins it.

The valley of Shigar, from the village of that name upwards for 24 miles, is some three miles in width. Along both sides rise steep rocky mountains; the immediate peaks are 7000 feet or so above the valley; more lofty ones stand behind. The valley itself, at a general level of 8000 feet, is occupied partly by the sandy and stony bed in which the river-channels are made, and partly by side alluvial deposits sloping down to that flat. On both sides cultivation occurs opposite each ravine-mouth, for there the waters of the side stream can be brought to irrigate the ground.

The village of Shigar is a long tract of cultivated land on the left bank of the river, where the ground slopes up gently to the base of the mountains. Here grow rich crops of wheat, barley, millet, and other grains, while all around each corn-field, their roots watered by the same channels that are provided for the irrigation, is a most luxuriant growth of apricot trees, which bear fruit of greater perfection than is met with in any other part of Baltistān or of the neighbouring countries. This, to my mind, is the most delightful place in all Baltistān; after the sandy tracts of Skārdū one can thoroughly enjoy sitting in the shade of the fruit-trees, whose bright foliage is varied by that of some large Planes, through which the eye can quietly view the grand mountains that on both sides bound the valley.

At varying intervals, for 20 or 25 miles up, are villages like this, but no one of so great extent. Towards the upper part of this length, on the right bank, which is the least sunny, apricot

and mulberry trees become fewer, and in their stead walnut-trees flourish. In the central flat are sandy tracts covered with the prickly shrub, *Hippophae;* through these the river flows with a large volume of water and great velocity; it can be crossed opposite to Shigar on rafts made of numbers of inflated goatskins fastened together by sticks; the force of the current, which here raises waves some feet in height, makes it a passage of some difficulty; in summer time it is impossible to get horses over, so that for some months there is no way of communication for them between the right and left banks; I had to leave my ponies behind at Shigar, and did not rejoin them for several weeks.

The Shigar River may be said to be formed by the union of the Bāsha and Brāldū streams, which meet at the top of this wide Shigar Valley. From these upwards the two branch valleys are narrow. I followed up both these branches in succession, beginning with the western, called Bāsha.

BĀSHA.

In the bottom of this valley there is no flat; there is, indeed, nought but the space occupied by the fans which project from the side ravines; each of these fans is the seat of a village, a small cultivated tract, with walnut-trees scattered about it. Often rocky precipices rise from the river side or else from close behind the villages; if one ascends far enough to see clear of these then the highest mountains come into view, peak after peak, rising from serrated ridges. Three thousand feet or so above the level of the villages are commonly pasture-grounds, whither the flocks and herds are driven for the summer months; on these there is often a collection of small stone huts for the shepherds to live in. It is only at such heights that any pasture can be got, and this still is scanty; it must be nourished by the moisture from the melting snow.

Following up the Bāsha Valley we find the villages to become rarer; a tract of many miles is passed without one being met with; at last we reach Ārandū, the highest in the valley.

Ārandū is close to the end of a huge glacier that fills up the valley with its great mass of ice, black with stone-heaps and dirt. The elevation of the village and of the foot of the glacier is between 10,000 and 11,000 feet. This is one of those largest glaciers that come down from some of the highest mountains and occupy a great length of the valleys. In making three and a half marches on it, or alongside of it, I obtained a fair knowledge of its form and character, of which some account will now be given, beginning from the foot and going upwards.

The valley thus filled with ice is a mile and a half wide; the height of the ice at the irregular ending off seemed about 200 feet; but above the thickness probably was greater. Crossing not far above the end we find a very irregular mass of ice, with ridges and hollows of no even run, so covered with stones that in going over the whole mile and a half, which is the width of the glacier, hardly once does one put one's feet on ice; on the higher parts are thick mounds of stones; on the slopes there are less; in the hollows again are accumulations of them; all this is because the ice has been so much melted as it nears its end that the stones of the various moraines have slipped and become mixed together. Thus it is for some miles up; but when we go farther up still, then the moraine matter appears in lines, and strips of clean ice come into view between them. If when one has passed along, say, 15 or 20 miles of the glacier, one rises on the hill-side to gain a view over it, one sees the great ice-stream lying with its enormous length in the valley, with a very low slope of surface; at this part the incline is not more than 1½° or 2°, though, below, the slope had been rather more; in the centre is a wide strip of snow-white ice moulded by melting into such forms as to give the appearance of waves of a rapid stream; on either side are lines of moraines; steep rocky banks make the boundary of all; above these are mountains with an immense spread of perpetual snow, from which spring glaciers, some ending off abruptly high above the main valley, others continuing on and coming down, with a steep slope, to join and coalesce with the large glacier. As we go up, large tributary

glaciers come in which themselves have a moderately low slope, as of 4° or 5°; to these again join some of the steeper ones, leading from the mass of perpetual snow above. The highest spot I reached was in the centre of the glacier 20 or 25 miles up from its foot; up to this place the width had been very regular, I should say from a mile and a quarter to a mile and a half; but here a greater expanse of ice was visible; the ice was white-surfaced, looking like a frozen and snow-covered lake, and here it was far clearer of débris than it was below, still moraine-lines lay along the centre. This wider part (which is about 13,500 feet above the sea) is where several glaciers meeting combine to form the great stream which thence, as before said, flows on with a gentle incline. From the foot of the glacier at Ārandū to the summit of the feeding glaciers the distance must be over 30 miles

At Ārandū there was cultivation; near above it birch grows in some abundance; at several places along the glacier side, chiefly in sheltered spots, both willow and birch are to be met with, but at the highest part visited only grass is to be seen; this in itself is rare for Baltistān; it denotes that here, in the heart of the mountains, moisture, either of melting snow or of rain, is more abundant. The way along the glacier was very rough, not many miles could be done in a day; it took us three and a half days to do what on the map would measure but 20 or 25 miles; the way was chiefly over the loose stones of the side moraine, but now and then it was possible to take to the hill-side; in the higher part the crossing of the side glaciers was especially difficult, for at the falling in of them the ice was much broken; as, however, no snow concealed the difficulties, we were able to avoid or overcome them without risk; in the very highest part visited there was a long reach of even ice in the centre that was easy to go on. The way was partly known to the natives of Ārandū. For some miles up from the foot they are accustomed to take their cattle in spring time for a month or two's grazing on the slope at the side of the glacier, whence snow melts earlier than it does on their own side of the valley. Farther

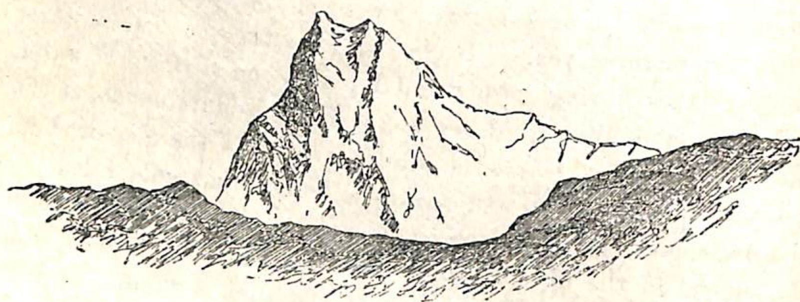
up the ground had been trodden by few; Major Godwin-Austen had been over it in prosecution of the topographical survey, and one or two English sportsmen had also found their way to the glacier side;* but the only marks of animal life were footprints of ibex, leopard, and of bear. As far as I know there is no way possible to the head of this great glacier and over the watershed. It is true that in the map which illustrates Mr. Hayward's letters on Gilgit and Yāsīn (published in the Proceedings of the Royal Geographical Society for 1870) a route-line is put in along the course of it; but this I think was inserted by mistake; the road to Nagar (a very difficult one), as shown by Major Godwin-Austen, goes up a ravine due north from Ārandū and not in the valley of this large glacier.

Along the side of the glacier there were both lakes and marks of former lakes. One of these that had existed a month before had occupied a space about a quarter of a mile long and 300 yards wide, and had had an extreme depth of 150 feet; its waters had drained away in three days. Another, of triangular form, had been half a mile long, with a perpendicular of 250 yards; it had dried or drained a week before we were at the spot, after existing some two or three years. Higher up were traces of two or three smaller lakes having existed, and I passed one still full of water. All these lakes are formed in a recess in the mountain-side, at the mouth of a gulley, where the straight course of the glacier shuts up the opening of it, and makes a hollow that gets filled by the drainage from above, unless there be a lower outlet through the cracks in the ice. If, after the lake has been formed, the onward movement of the glacier makes such a fissure as will enable the waters to communicate with the general nether drainage of it, then the lake runs dry. While the lake remains sand and mud are deposited in its bed, which afterwards tell the tale of it; and moraine stones shed by the glacier become imbedded in the finer deposit.

* Major Godwin-Austen has given an account of this and other glaciers of the Bāsha and Brāldū valleys in a paper read before the Royal Geographical Society on the 11th January, 1864.

BRĀLDŪ.

The valley of Brāldū, down which comes the easterly tributary of the Shigar River, has been so well described by Major Godwin-Austen in the paper before mentioned that I will not give any detailed account of it. In the lower part it a good deal resembles Bāsha, being narrow and having various villages on the alluvial fans. At the head of it are the highest mountains and the largest glaciers of any. The largest glacier of all (this one I did not myself visit) is the Bāltoro Glacier, 35 miles long, which comes down between two extremely lofty ridges; the southern ridge has peaks over 25,000 feet, while the northern (which is part of the watershed) rises in one spot to the height of 28,265 feet, the peak of that height (marked K 2) being the second highest mountain known in the world, Mount Everest only exceeding it. It is not easy to get a sight of this mountain; I once saw it from a distance of nearly 70 miles, standing up, in the form given in the sketch, clear above all the great ridges.



K 2, 28,265 FEET; AS SEEN FROM TURMIK.

A way from Skārdū to Yārkand used in former times to lead travellers for some distance up the Bāltoro Glacier, and then across the range, here called Mustāgh, by one of the northern tributary glaciers. From certain ice-changes that road becoming too difficult, a new one was struck out up a more northerly glacier

that leads to where Mustāgh Pass is marked on the large map. This one I followed for some distance up the glacier, but not as far as the summit of the Pass, to which as yet no European has reached.

In following this road there was formerly—and may be even now—danger from the Hunza robbers, who, issuing from their own country and crossing the watershed by an easier Pass, used to attack the caravans where the two roads met on the farther side of the range. When I was in Brāldū, in 1863, I met with one of a very few men who had escaped from an attack that had been made a week or two before on a small caravan of Baltīs who were returning from their country after a sojourn in Yārkand. Nearly all had been captured to be sold as slaves, and of the goods, horses, and cattle nothing was recovered. And the physical difficulties of the road are not small. The Pass is open for but a short time in summer; as soon as snow falls on it the crevasses are hidden and the journey becomes dangerous. In crossing, men are tied together, yāk-calves are carried; ponies of Yārkand—a useful breed—also used to be ventured, they were sometimes led over the crevasses with ropes, held by eight men in front and eight behind. Even when safe over the Pass (on the hitherward journey) the horses and cattle could not at once be brought down to the inhabited parts; they had to be kept in one of the intermediate pastures until, as winter neared, the streams got low and the passage along the valley became practicable for the four-footed ones. These combined difficulties have caused this road to be at present disused. From the time I was speaking of, 1863, up to 1870, when I again visited Baltistān, there had been no communication between that country and Yārkand.

RONDŪ.

The part of Baltistān next to be visited is that portion of the Indus Valley which is below the wide opening of Skārdū. We saw that the valley was narrow above that opening and narrow below it. The narrowest part of the lower gorge is called Rondū;

that name also has a political signification, for Rondū is a Rajaship dependent on Skārdū;* but before we reach the boundary of that division certain other places in the narrow valley will call our attention; these will be dealt with nearly in the order in which I came on them in marching down from Skārdū.

I took the left bank. Katsūra is the first large village. It is situated at the mouth of a ravine, whose foaming stream drains a great space of mountain country on the south. At the debouchment there is a mass of fan-stuff and moraine-stuff. For cultivation there is water in plenty, but ground fit for it is scarce, the loose blocks of stone so much fill up the space; wherever water-courses run, there fruit-trees flourish exceedingly well, the fields are all shaded with them; there are apricot and walnut in great plenty, and mulberry trees that bear a very fine fruit, resembling, but excelling, that which we have in England. This cultivated part is on ground that has been made by the stream; but at the mouth of the ravine, on both sides, is an enormous amount of glacier débris; on the right or south-east side is a long moraine-heap, reaching from close by the mountains down to the river, which, being confined thus on its left bank and by a fan at Bragardo on its right, here changes from a wide-spreading river to a torrent. One very large transported block I observed on the moraine; it was of mica-schist, approaching to gneiss; the part of it exposed measured 140 feet by 90 feet by 40 feet high. On the left bank of the Katsūra stream is another moraine-heap that also begins from the mountain-slope; this is an enormous accumulation, the surface is all of large blocks, it stretches wide as well as long; a great hollow in it is occupied by a lake, which the people there call "*Jarvā Tso*," some three-quarters of a mile long and 300 or 400 yards broad; to this lake there is no inlet of water, except a little waste from the irrigation and on one side a spring; there is also no visible outlet, its waters fall in winter and rise in summer, but to no great extent. That part of the moraine which bounds

* Formerly the Raja of Rondū was tributary to the Raja of Skārdū; now he is but a pensioner, and Rondū is governed directly by the Maharaja's representative at Skārdū.

the lake towards the mountain-side is a great steep bank made up of masses of rock, of gneiss or of schist, piled to a height of 350 or 400 feet; the pieces of rock composing it are large, those of 20 to 30 feet in diameter are in thousands, and those of the size of 50 and 100 feet are many. The moraine-mass ends towards the river in a cliff of perhaps 500 feet. The glacier that left all this moraine must have been of great size, whether we judge from the moraine itself or consider from the map the area it must have occupied. Doubtless at one time—perhaps more than once—the moraines or the glacier, or the two together, dammed the river and made the Skārdū Valley into a lake. I will not here discuss whether *all* the lacustrine deposits and accompanying phenomena of that valley can thus be accounted for, but that some may I am sure.

Between Katsūra and Bāsho the road leads us, some hundreds of feet above the river, sometimes across taluses, sometimes on the face of the cliff, often being carried over frail wooden stages that have with difficulty been fixed; the way is rough and difficult. Bāsho is at the re-entering angle made by a bend in the river valley, where, too, a ravine comes down to meet it. There is a small space enclosed between rocky spurs; the part that is cultivated is crowded with fruit-trees; these are mostly of the same sorts as those before met with, but here apricots do not grow to perfection; the speciality of the place is grapes, particularly is it noted for the small black currant-grape, of which there are some little vineyards.* On the mountains behind Bāsho is a forest of pine, the *Pinus excelsa*; this begins about 9000 feet from the sea level and extends well above. I hear that there are many places in the basin of the Katsūra stream also where this tree is found. The occurrence of it marks a considerable difference in the climate of this western part of Baltistān; the difference, however, seems to affect only elevations such as these, and not the base of the valleys.†

Below Bāsho the road is as bad as it was above; at last the

* The height above the sea is 6900 feet.

† At the head of the Stok Valley (north of the Indus) *spruce-fir* is found.

valley-way becomes so difficult that one is forced to rise the mountain-side for some 4000 feet, and, crossing a spur, to descend to the valley again; on the slope as we rose the pencil-cedar was plentifully scattered, and on the summit of the spur-pass which we crossed* was a grassy and bushy slope and much birchwood, this being another evidence of our having come to a less completely Tibetan climate. From such a position as this Pass, several thousand feet above the valley, we were sure to obtain a more complete view of the mountains than from below, especially of those on the right bank of the Indus. They were mountains of the grandest form. Facing the river were enormous cliffs, or steep slopes of bare rock, fining at their summits to peaks; sharp ridges divided the various ravines, and from them issued spurs ending in vertical precipices; all this on an extremely large scale. The steepness of these mountains is such that there are several quite inaccessible tracts—valleys into which no one can penetrate.

The ridge that we crossed (which is at the salient angle of a bend of the river) was the boundary, the beginning, of the Rondū Rajaship. When the Dogrās came, a defence-work was here thrown up by the Rondū people, but the Dogrās turned it by taking a higher path, which, for a good reward, the Bāsho people pointed out; the parallel of Thermopylæ cannot be carried any farther.

A fact of very great import in the consideration of the former physical geography of this country came here under my notice. On a lower part of this same spur, just facing the opposite valley of Turmik, I found loose on the surface well-rounded stones, of granite and schist, many the size of one's fist, some a foot across; they were so distinctly a river gravel that the headman of Bāsho, who was with me, said, "This is the sort of stone found by the river side; I am astonished to see them up here"; the level must be 9500 feet, that is, some 3000 feet above the river; the explanation of their presence will be the same as what will account for the high-level deposits in other parts of this Indus Valley.

Thence the road descends, by a zigzag way that looked impracticable, and really was difficult, to the river side, and soon

* The Katsibūr Pass, 11,500 feet high.

after we reached the first village of Rondū; beyond it were more rough ascents and descents, which, to us, exposed in the lower level of the valley to the rock-reflected heat of the blazing sun, were some of the most trying bits of ground we had met with; then we reached the head-quarters of Rondū, a village called by the same name.

Rondū village, which has an elevation of 6700 feet, is a strangely-situated place; it occupies little shelves, as it were, on the rock. A ravine that comes down from the southern mountains is here narrowed up to a deep gulley of 30 feet in width, with vertical rocky sides; along these cliffs the water, taken from higher up the stream, is led in wooden troughs supported in one way or another as the people have been able to manage; on coming clear of the gulley it is distributed in little channels throughout the village, of which the whole area is but small. Here the same crops and the same fruit-trees are met with as before, with the addition of pomegranate; weeping willow too adds its graceful form to the varied collection of trees that almost hide the fields from view. On a separate, narrow, nearly isolated, plateau is the Raja's house, which is called the Fort. It is a curious building, made of courses of stone and wood, with corner-pillars and doorways of the same slab-arrangement that we saw at Bhadarwāh. The river flows past, some hundreds of feet below the level of the village, between perpendicular rocks of massive gneiss; in a narrow part it is spanned by a rope-bridge, made of birch-twigs, which is 370 feet long in the curve, with a fall in it of some 80 feet, the lowest part being about 50 feet above the stream. The approach to the bridge is over slippery rocks; the path to it is so narrow and difficult that one's steps have to be aided in many places by ladders.

We have here a repetition of what, under the heading of Central Ladākh, I spoke of as occurring by Dāh, which is 120 miles higher up in this same Indus Valley. For a long distance the river flows in a narrow gorge, the vertical rocks that form it are over 600 feet high; this lowest part of the cross-section of the valley, perhaps even for a height of 1000 feet, seems to be distinct,

as to slope, from that above, as if the latest down-cutting had been done with a different tool. This was noticeable in many places between Katsūra and Rondū. Another instance of the last deepening of stream-channels being done in such a way as to make but a narrow gorge is at the flowing in of the stream of the Turmik Valley to the Indus; between that river and the village of Dassū a narrow channel, several hundred feet in depth, has been formed through, as it were, a barrier of rock.

DEOSAI.

This is a tract which, from its position intermediate between the different divisions we have adopted for description, from its being a kind of no man's land, has run the risk of being passed over by us without notice. Whether it can strictly be called part of Baltistān I am not sure; but at all events it may be as conveniently described here as anywhere.*

Deosai is a plateau, a mass of high land, surrounded by yet higher mountains. The centre of it lies 25 miles south-south-west from Skārdū, while the nearer edge is only 10 miles from that place. There is a ring of mountains, irregular, but still of a general circular form, the diameter of which, from crest to crest of the ridge, is about 25 miles. These mountains make a rugged serrated barrier of a height of from 16,000 to 17,000 feet. Within this ring is flat, though not completely flat, country, made up of plateaus more or less separated by flat valleys a few hundred feet below them in level. This flat part varies in height from 12,000 to 13,000 feet, according as we measure a valley or an intermediate plateau, or according as we take the measure away from or near to the mountains. As to the ring of mountains, they are serrated, but there are few low depressions in them; one towards Skārdū, over which (by the Burjī Pass) comes the road from Kashmir, is 15,700 feet high; and on the western side are one or two dips at an elevation of 14,000 feet. The face of the moun-

* There is a short sketch of this tract in my paper on the Indus alluviums, before quoted (Quart. Geological Journ., Aug. 1873); something of what is written in it will be here repeated.

tains is divided into steep-faced hollows and projecting spurs. As these spurs stretch out and diminish in altitude, we find, in continuation of the line of them, the widths of plateau before mentioned, separated by the valleys, which latter have originated in the hollows of the mountain-ridge. The diameter of the ring of mountains being 25 miles, an inner concentric ring of 15 miles diameter will, roughly speaking, include the plains of the two sorts—the higher dry stony plateaus and the intermediate flat valleys. The drainage of the area, first, to some extent, converges to the centre; then, the streams being united, the water flows away through an opening in the hills at the south-east corner by a stream called the Shigar River (the second, it will be observed, of that name in Baltistān), which flows into the Drās River, and so to the Indus.

In the paper before cited I have endeavoured to show the origin of the present form of the Deosai plateau; I will not here repeat the whole line of argument, but will state that my conclusion is that formerly—in some part of the glacial period—the whole was one stony, watery expanse, over which flowed streams from the glaciers that then filled all the hollows of the mountains, these streams bifurcating, rejoining, converging; that during this time the stony, gravelly, material that we see in the higher plateaus was accumulated by the streams in their beds, the level of the whole area becoming thus raised, while the continuation of the course of the combined waters down to the Drās and the Indus rivers was itself contemporaneously being raised; that, later, when the time came, probably on the change of climate—when less frost made less waste of the mountains—for the streams to be denuders instead of accumulators of alluvium, then the valleys were cut out, as continuations of the hollows of the mountains, and the intermediate spreads of stony table-land were left, which towards the hills connect with the spurs, and away from them end off where two of the valleys join.

The most frequented route between Kashmir and Skārdū is over this plateau; the particulars of the marches are given in Appendix IV., Route 10; we will here only concern ourselves with

those that lead us across Deosai. In coming from the side of Kashmir, one's last halting-place within the Jhelam basin is at a spot called Burzil.* Thence two Passes have to be traversed near together. The first, called Stākpi Lā, leads from the Kishangangā basin into that of the Shingo, a tributary of the Drās River; it is therefore on the line of the main watershed. The Pass (which is 12,900 feet high) is a defile; the bottom, almost level for the length of a mile, is here turf-covered, there strewn with blocks; mountains of grey granite rise to something less than 2000 feet close on each side; in a mile or two the defile opens into the wider valley at the head of the Shingo River. This we now but dip into and cross, rising out of it to the north-east by a short steep ascent to a Pass called Sarsangar (13,860 feet), immediately on the farther side of which, after a descent of a few feet only, we come on a lake occupying the base of the defile. The lake is half or three-quarters of a mile long and a quarter wide; it is but another work of the old glaciers; many old moraine-heaps and *roches-moutonnées* had we passed, and now we find this lake closed in by an old moraine; here too are polished and grooved rocks; whether the lake occupied a rock-basin or was entirely caused by the moraine-matter damming the waters I could not determine. Immediately beyond—at a lower level by some 150 feet—is a second lake of about the same dimensions; this also is dammed by a moraine. A few miles off to the north is a larger lake called Sheosar; it is a nearly circular sheet of water of a diameter of more than a mile; this seemed to be a rock-basin, there was no sign of moraine-matter for the dam; if the lake is pretty deep, as I think it is, the hollow will certainly have been made in the rock itself. Over a neck but 150 feet above the lake goes a path to Astor; this neck is part of the boundary of the Deosai drainage, for beyond it a valley led down suddenly in the direction of Astor. Onwards we cross the wide plateaus and the narrower valleys of Deosai. For five-and-twenty miles the road traverses the one and the other alternately; the plateaus

* This is also one of the stages on the route between Kashmir and Gilgit, as we shall see in the next chapter.

are dry and stony, the valleys have some little pasture. There are no human inhabitants. The living things one sees most of are the marmots. These animals are in great numbers; and they are always watching one, sitting by their holes upright on their haunches, with their knowing heads poked a little forward, and their paws held up in front of their breasts. They cry with a voice between a squeak and a whistle; when alarmed they dive into their holes with wonderful rapidity. In colour they are bright brown on the back and lighter on the belly; as to size, they may be $2\frac{1}{2}$ feet long. The Gurez people (who speak a Dārd dialect) call them *Trishūūn*, *shūūn* being the word for dog; I was unable to find out what the prefix *tri* meant.

The passage of this table-land is easy enough in summer. The elevation of the road averaging perhaps 13,000 feet, the rarity of the air is felt, but not badly; some grass, fuel, and water can be found at every place required for a halting-ground. But with the first coming on of winter the Pass is closed by the snow, and it may be dangerous to be caught on the waste. Generally the end of September is the time; but in 1870, on the 8th September, such a fall of snow came as to cover the whole plain to a depth of half a foot or more; this snow lasted for a few days only, till the sun came out strong again; in this storm three Baltīs lost their lives,—they died of cold during the night; a Hindostānī servant of mine who was coming with a pony and a mule managed to find shelter, and weathered it. All the spots frequented by travellers on Deosai have two names, one which the Baltīs call them by, and one originating with the Dārds of Astor or Gurez. Especially is this seen in the names of streams; one name always ends in *chu* and the other in *woi*, which words are respectively the Baltī and the Dārd for water.

The Skārdū road leaves this tract by a Pass of 15,700 feet over the northern part of the bounding ridge. In approaching this we see how the mountains are cut out into flat-bottomed amphitheatres, and we see clearly that these were the beds of ancient glaciers. Across the front of each of them is a stone-heap nearly level on the upper, inner, side, and sloping down on the outer;

these were terminal moraines, on which the glacier had raised itself while it shot down its detritus to make the slope below. The road passes by one of the most perfect of these amphitheatres; it was about a mile and a half long, and half that in width; on one side the rocks rose clear and precipitous for some 1500 feet, making a sharp-edged ridge; these curving round were on the other side more covered with stony taluses; the nearly level bottom was in great part occupied by moundy masses of stone, among these lay one small tarn, while a larger one reached to the foot of the great cliff, reflecting its crags. The narrow ridge divides this amphitheatre from a valley that leads direct to Skārdū with the great fall of 8000 feet in seven miles, measured straight, or about eleven miles by the road.

At the summit there opened a view which produced an impression of grandeur as deep as I had ever experienced. We looked from our great height right on to the mountains beyond the Indus and Shigar rivers. These, though distant 40 and 50 miles, presented a magnificent spectacle. It was a combination of various lines of mountains, with lofty peaks rising from these ridges in great precipitous masses, or in pyramids ending in acute points, the snow thick on them; these vary from 21,000 to 25,700 feet. Below this great region of snow mountains comes an enormous depth of rocky ones; in the upper hollows of these lie some glaciers that reach far below the level of the snow. We saw this in the morning sun, which lighted up the higher snows and threw dark shadows of the peaks over the lower snow-beds, but it made a soft haze in front of the nearer rocky mountains, which perhaps aided in giving us so great, so true, an idea of the size and grandeur of the range.

THE GAME OF POLO.*

Baltistān is one of the homes of polo. This is so thoroughly the national game of the Baltīs that almost every village has its polo ground, enclosed and carefully kept for the purpose. The people are passionately fond of the game; those of rank look on

* It can now hardly be necessary to define this game as hockey on horseback.

the playing of it as one of the chief objects for which they were sent into the world; but not to them is the pursuit confined; all who can get a pony to mount join in it, and the poorest enter thoroughly into the spirit of it; the children from an early age get their eye and hand in accord by practising it on foot—playing indeed the ordinary hockey of our country. It is not surprising that such an active pursuit of the game should produce good players. I have met with young men of most admirable skill. These have been mostly of the Wazīr class, a class of men who, while always able from their circumstances to join in the pursuit, have greater activity and energy than the Rajas whom they serve. The Rajas, indeed, have been all brought up to play, and they also usually have good skill, but they seldom ride with the same pluck, or throw themselves so completely into the game as do the Wazīrs.

In Dārdistān also polo is played. Indeed it is practised from Leh on the south-east to high up the Gilgit Valley on the north-west, and even in the Chitrāl Valley beyond; I have met and played with some people from this last country who had come to Gilgit on political business. At Leh it was introduced by the colony of Baltīs who settled at Chushot, close by; it has been adopted by the higher class of Ladākhīs, but not by the people generally; on the other hand, in every place where live Baltīs or Dārds, the polo ground may be looked for.

For an interesting fact relating to the antiquity of the game we are indebted to an anonymous correspondent of 'The Times,' who, on 12th June, 1874, gave an extract from the 'History of the Reign of the Emperor Manuel Comnenus' (by Joannes Cinnamus), which shows that the very same game was played at Constantinople in the middle of the twelfth century, and that even at that time it was considered an old as well as an honourable game, and was practised by the Emperors themselves.* In the

* I here give a translation from the Latin of that part of the extract which describes the game. It will be seen that it differs not from the polo of to-day except in the form of the stick. "The nature of the game is as follows:—Young men, divided into sides of nearly equal numbers, discharge a ball made of leather, about the size of an apple, into a certain place previously measured out for that purpose.

time of the Mughal Empire in India it was, I believe, common among the courtiers. Strange it is that, dying out in India, till it remained only in two odd corners—Manipūr and the country we are describing—it should now again be learnt and practised by the last new rulers of India.

Englishmen in Calcutta first got the game from the people of Manipūr on the borders of Barma. In the Panjāb they began playing it about ten years ago, the game having been introduced into that province about simultaneously from Calcutta and from the Kashmir country. The English visitors to Kashmir played it, as far as I know for the first time, in 1863; from there it was carried to Syālkot and other British stations, while about the same time the Calcutta game also spread into the Panjāb.

I have played polo with natives of Baltistān and Dārdistān in many different places, and have closely observed their styles of play; as it is a pastime that has now got a good footing in England, and is likely, I should hope, to spread, it may not be amiss to say something of the way in which it is played abroad.

In these mountainous countries the tactics of polo are modified, or at all events determined, by the narrowness of the ground it is played on. There it is seldom possible to get more than a long narrow strip of level ground—never is there a wide expanse. The length from goal to goal is commonly 200 yards, sometimes it is as much as 250; while the width of the ground is from 30 to 40 yards only; the width of each goal is over ten and under fifteen yards; the goals are marked by white stones sunk into, but showing half a foot or a foot above, the ground. The surface is

Then on each side they make at full gallop for the ball, which has been placed in the middle, as if it were a prize, each having in his right hand a stick, which is of moderate length and terminates suddenly in a rounded space, the middle of which is filled up with catgut strings fastened together in the manner of a net. Each side then does its best that it may be the first to drive the ball beyond the other (i. e. *opposite*) goal which had been previously marked out. For when the ball is driven into either of the goals by the use of the netted sticks, that is reckoned as a victory for one side. This, indeed, is the nature of the game; it obviously lays you open to a fall and other dangers, for it is necessary for anyone who practises it to lean back continually and to bend to right and left, so as to wheel his horse round and direct his course and his movements according to the varying movements of the ball. In this manner, then, is the game in question carried on."

generally a fine turf, which is kept in good order by occasional irrigation; the ground is enclosed by loose stone walls, so that the ball seldom goes beyond bounds; the game is better when these walls are smooth, so that the rebound of the ball can be reckoned on, but their rough construction seldom allows of this.

There is no maximum or minimum number of players; in a large ground fifteen a side is considered a full number, but very fair play can be got with six or seven a side. The people consider that it would be impossible for the game to go on properly without music; the band, then, consisting usually of two pair of drums, a fife, and a long horn that one man can hardly wield, first escort the chief personage—the Raja of the place, or whoever he may be—in procession to the ground, and then take their post on a raised platform in the centre of one side. Then the Raja sitting down has the sides made up. This is done in a fairer way than by alternate choosing—which gives such advantage to him who wins the toss. Each man gives either his whip or his polo stick, and these are paired, either by the Raja's advice or by the general voice of the bystanders, so that two equally good players are made into one pair; then is brought forward some little boy who knows nothing of the relative skill of the owners of the whips, nor even whose they are, and he, taking a pair of whips, shifts them round two or three times in his hands, and then separates them, putting down one on his right hand and one on his left, and so with each pair till two heaps are made, the owners of which represent the two sides. All this is for the sake of equality and impartiality. The players commonly know each other so well that they do not distinguish the sides by any aid as of colours; this makes it very puzzling for a stranger and less interesting to the spectators; the plan of wearing colours is certainly one to be commended.

Though the goals are appropriated to the two sides, yet the players do not take up their station at their respective goals, but *all* congregate at one end. Then from here one player begins the game by taking the ball in his hand, starting off at full gallop,

and, when he comes to the middle of the ground, throwing it up and striking it as best he can towards the enemy's goal; in this some are so skilful that the ball sometimes enters and the goal is won without anyone else having had a chance. But the leader is followed not only by his own side, but by all his opponents, galloping close behind, and the struggle comes for the second blow, if the ball has not reached the goal. Now when one of the other party gets the chance, he does not strike it back in the direction he wishes it ultimately to go, but carries it on *towards his own base*, for the sake of putting it not through, but past, outside, the goal-marks, that is to say, for the sake of making the ball miss the goal and pass behind. If this happens the practice is for a bystander to take up the ball and throw it as hard as he can in the other direction, so that now the second side have the advantage due to the impetus. And it is the rule that the game is not considered as again started until one of that side has touched the ball, this being done without interruption from the other side. Now probably will come the time when the ball gets checked and entangled among the horses' legs; then comes a *melée*, often amusing enough, when with crowding ef horses, pushing, hooking of sticks—intentionally as well as by accident, for it is an allowed thing—the ball remains for long confined and often invisible; till by some chance it gets clear and is carried away by some nimble-handed one, when a race again begins, to make or save the goal.

The better players are marvellously good in carrying the ball along by successive strokes on whichever side of their horse it may happen to be; their ponies too—well knowing their duty—follow it in every turn and to the best of their speed. But an opponent coming up may spoil the other's stroke by catching his stick even when unable to reach the ball itself. Others following close take up the game, and so it rolls from one goal back to the other, or to the centre, backwards and forwards often for long. When the ball enters the goal, even then the game is not ended; it is not won until a man of the nearly victorious party dismounting picks it up; so that there is yet a chance for the other side

to strike the ball out again and carry it away; but it must be struck out as it came—between the goal-marks, else the first side have still the power to pick it up.

The music had been playing nearly the whole time, with especial force on the taking off and on each rush at speed, and now, when the ball is caught and the game won, the band strikes up in sign of victory, and immediately, no breathing-time being given, one of the winning side gallops out with the ball—commonly the one who dismounting picked it up—and takes off as before, for a new game. It is this that brings about the custom of *changing goals* at each game; for the winning side, having put the ball through their opponents' goal, in starting afresh from there, make it their own.

There is no rule against getting in front of the ball or waiting at your enemy's goal; this last is commonly done by some wily players, while staying at one's own goal to defend it is never even thought of.

In this way the play goes on without a moment's intermission may be for a couple of hours or even more, until one side has scored nine games, which may have involved the playing of seventeen; this makes the rubber, and the reaching to that number is the signal for resting, or more probably for closing the game.

Now comes in another ceremony. The winning side, riding up, collect in front of the musicians, and, while they play the Baltī equivalent for 'See the Conquering Hero comes,' join in with shouts and cheers, and raising and lowering and waving of their sticks; and then, if they are much elated with their victory—if some wager, or some point of credit had been depending on the game—a few of them will dismount and commence a grotesque dance to horrible music, accompanied by wild grimaces and gestures to mark their exultation, the other party meanwhile having slunk off to the farther end; all this shows how thoroughly the Baltīs and the Dārds enter into the game and enjoy victory in it.

Once or twice I was especially glad to find myself on the

winning side. The stake was a *salaam*, which the losers had to fulfil the duties of by walking the whole length of the ground up to the winners, who were seated at the farther end, bending nearly to the earth in a salaam at every twenty steps or so, at each bow the others raising a cheer. At the last, however, the victors too rise, and cordially return the salutation. This is most likely to be the stake when two villages or districts are the rivals.

Though eager in the game the Baltīs play good-humouredly; sometimes a hard knock is accidentally given, but I never saw any falling out.

The ponies of Baltistān are admirably adapted for polo; indeed, this is almost the only use they are put to, for the roads are too bad for them to be used to carry packs. It is likely, then, that they have for long been bred and selected chiefly in view of this use, and their form may be said to embody the experience of generations of polo-players as to the right kind of animal for the game; for this reason I will say a few words in description. They stand about twelve hands three inches, or thirteen hands; for their size they are rather large-boned; they are compact in make; they have a broad chest, a deep shoulder, a well-formed barrel well ribbed up, and good hind-quarters, and a small, well-shaped head. They are good at hill-climbing, and at polo they are very active; they are of good heart, going long without giving in, though they are terribly hard-worked at every game. These ponies are ridden on a plain snaffle, and not with the sharp bit that natives of India are so fond of using. The Baltīs do not wear spurs, but they carry a short whip, hanging on the wrist, with which they urge their ponies to full speed.

The following are a few of the Baltī words used in connection with the game; they may be useful to anyone else who should wish to join those people in playing it.

Ball	polo.	*A goal gained*	hal trang.
Stick	bentho.	*Ball gone behind*	hal chitsun.
Goal	hal.	*Taking off*	dafok.

I wish now to compare the system of polo-playing in Baltistān with that followed in England, especially at Lillie Bridge, where

only in this country have I seen it. There is not a great difference between the two, but it may be useful to discuss some points and perhaps to make some suggestions.

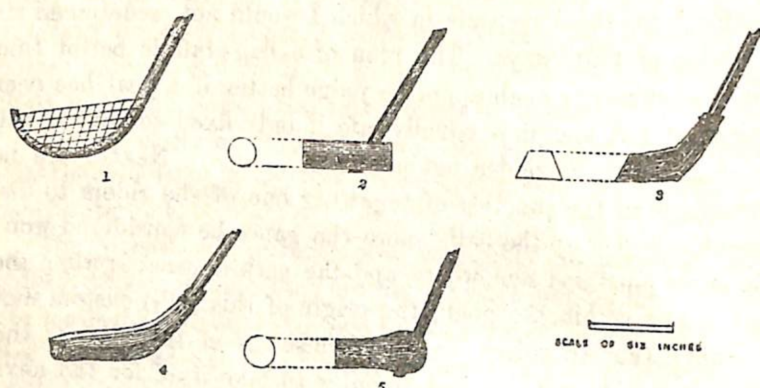
First, for those respects in which I would not recommend the adoption of Baltī ways. The plan of a flag-staff is better than the goal-stone; it enables one to judge better if a goal has been gained or not, and it is equally safe if only fixed so that it will go down easily if ridden against. Next I see no advantage in the practice of requiring one of the riders to dismount and pick up the ball before the game be considered won; the game must end somewhere, and the natural time is when the ball is put within the goal; the origin of this Baltī custom was, probably, the struggling among themselves of the men of the winning side to get the ball, in order to take it off for the next game. Again, the giving no breathing-time between the games is not likely to be followed by those so careful of their horses as are Englishmen; it causes a useless strain on the animal's wind.

As to hooking of sticks; the practice certainly is productive of amusement and variety. One sometimes sees a man careering along just ready to give the victor stroke, unconscious of others following hard upon him, when a gentle hook will spoil his aim and discomfit his whole procedure. But I cannot recommend it for Englishmen; their tempers will not stand the interruption and consequent vexation; the practice was tried and disused in Upper India. Whether with the cooler air and the other sedative surroundings of home it could safely be adopted I will not presume to judge.

An important branch of the subject is the question of the kind of stick to be employed; certainly, next to one's pony the stick deserves attention. There is considerable variety, the different sorts being used in different parts. The accompanying cut shows six different forms.

No. 1 may be called the Byzantine stick. I have drawn it from the idea I received from the description given in the extract quoted in the note to p. 381, though perhaps the netted space was

more of the shape of a racket; it would suit best, or only, with a light ball. No. 2 is the Calcutta stick, taken, I imagine, from the Manipūrīs; it is a stiff bamboo, four feet or more long, with,



POLO STICKS.
1, Byzantine; 2, Calcutta; 3, Baltī (Skārdū, &c.); 4, Baltī (Kargil); 5, Dārd.

for a head, a cylindrical piece of hard wood. The Baltī sticks (Nos. 3 and 4) have curved heads, the curves being of various degrees of sharpness, according to the fancy of the player; some of the best players use a short stick with a very slightly curved head; the other differences are that the handle is shorter (being usually 3½ feet in length), thinner, and more elastic; and the head is much heavier in proportion to the handle than that of the Calcutta stick. The head of these Baltī sticks is bored right through for the handle, which is fixed by a tight fastening round the upper end of the head, this being enabled to get a grip on the handle by a slot a couple of inches long being cut in front. It seems that the Calcutta stick is the only one that has been introduced into England. I say with confidence, having tried both sorts and seen them both tried, that the Baltī stick is the better, that more can be done with it. Very likely it takes more time to learn the use of it; its shortness involves one's getting nearer the ground—the kind of stick thus reacting on the style of riding; for while the Calcutta stick would both be suited to and tend to

perpetuate a stiff kind of riding, the Baltī stick would encourage a freer and more flexible style. When one's play is accommodated to a short stick there is a distinct advantage gained, in that the ball will be more lifted by the blow, and be carried farther; in cross-cuts, again, the Baltī sticks are much more manageable. Their top-heaviness, though awkward for a beginner, helps the blow to be very effective. The Baltīs do not give the stroke from the wrist, but from the elbow or the shoulder. No. 5 is the kind of stick used in the Gilgit country. The section of the head of it is circular, the handle is elastic. With this sort I was not much taken; those who use it—the Dārds—make a very different kind of stroke from what the Baltīs do; they give a short circular stroke from the wrist. This is apt to raise the ball (and knocks on the knee are not uncommon from this cause), but it does not drive it far, and the game generally of these players is closer, more shuffly, more of a *mêlée* than that of Baltistān.

It is almost essential that the head of the Baltī sticks should have the grain of the wood curved with its curve; the piece should be cut from the knee of a branch, or of course it might be bent by steaming. Birch is most commonly used, but probably oak would be as good; for the handle, hazel or ash would do well.

The ball used out there is as light and knotted a piece of wood as can be found; often it is from the root of some tree; bamboo-root is probably the best of all. Such a ball as this is more lively than the cricket-ball which, I believe, is used in England.

As to the ground, the Baltīs will have it that their long narrow spaces are the best, and they wish for nothing better. Still there can be no doubt that it is only the character of their country, the confined area available, that brought about the rule of narrow polo-grounds, and, perhaps, the practice of all riding in one direction. I myself think that a square of 200 yards, with the goals in the middle of two opposite sides of it, leaves little to be desired. If, indeed, it were possible to enclose the area by any

kind of turf wall, or by boarding, which should be smooth enough for the ball to rebound from it at the calculated angle, then a narrower ground—not so narrow, however, as those of Baltistān—would give opportunities for very pretty play. In any case, the bounds should be conspicuously marked.

We now come to the subject of tactical rules. One cannot help allowing considerable weight to the fact of three, if not four, Englishmen having lost their lives at this game within the first ten years of its introduction into Upper India. Considering the small number of places where it is practised, this is a large proportion. In Baltistān, fatal accidents at polo are hardly known, and it behoves us to examine whether this may not be due to their different way of conducting the game. I have little doubt that this freedom from accident arises from the galloping being done by all in the same direction at one time; there is no meeting; both sides start together and ride together after the ball. This is a very different thing from two sides being drawn up opposing each other, as in a tournament, and galloping towards each other. I grant that with a wide ground one may not be able to keep the direction of riding so completely as they do in Baltistān; but I think that the start should be made from one direction only, even if after that the courses may be less regularly kept. As to the commencing, the Baltī plan of striking the ball in the air at a gallop is much more workmanlike—requiring as it does some considerable skill—than any other.

To speak generally as to the play one sees at Lillie Bridge. I am sure that the best players there, were they to see a game played at Shigar or at Rondū, would learn much. They would learn how much of skill there was to be acquired. They would, I think, see that the best kind of pony was not a leggy animal, but a compact-built, handy, pony, that is both quick to start and quick to turn, a pony whose own intelligence is brought to bear on the game, not one that incessantly has to be worked by rein and spur, and certainly not one that requires blinkers. New kinds of stroke, too, would they learn; some of them, I believe (though I may have a bias on this subject, which should be allowed for),

attainable only with the shorter and comparatively heavy-headed sticks. A stroke corresponding to cut four of the cavalry exercise is a favourite one with the best Baltī and Dārd players; it is difficult, but it is often useful. A cross-cut stroke, right across the front, is especially useful in our wide grounds, and a modification of this, by which the ball when nearly in front of one is sent to the left rear, is nearly equally so. These can all be done at the gallop by a good player. A fault to be avoided is the fighting too much over the ball when it is far away from the line of the goals, where the working it backwards or forwards can do little good or harm to either side; this looks as if the object were simply to get a knock at the ball, without reference to where it might go. True it is that even from the far side a good player well mounted may take the ball away and drive it home, but with the greater number the struggle there does not affect the result. When, as is not uncommonly the case in England, the sides are small, it is a good plan to bring the goals nearer to one another; and if that makes the game seem too easy, then the goals may be made narrower.

I have made these suggestions about the English play, in the full hope that if the game is kept up the play will improve, and with the desire to help even a little towards that end. That it is a game worth keeping up I feel strongly. It is one that, to play it well, requires a combination of skill of various sorts. As an exercise it is admirable, for it brings into action nearly every muscle of the body. As a pastime, it seems to me unrivalled; it is never tedious; with good sides it is always interesting, and often exciting.

Lastly, I must try to efface an impression that has lately got abroad, that polo is a cause of cruelty to the ponies. It can only be so if racing be cruel to race-horses, and hunting to hunters. The truth is that the game brings out a horse's capabilities, exercises his faculties, and so makes him fulfil the object of his life, in the highest degree. In the heat of the game a blow from the ball on his shin or his knee (a joint by no means so tender as our knee, with which it does not correspond in structure) is

hardly felt, and this is about the worst that is likely to happen with moderate care in playing, which care should be dictated by a consideration for both man and beast. If one exposes the ponies to no greater risk of injury than we do ourselves at polo, or at football—and I cannot think their risk is greater—then the best friends of animals should be satisfied.

CHAPTER XVII.

DĀRDISTĀN: THE COUNTRY.

THE ROAD FROM KASHMIR TO GILGIT — ASTOR — BAWANJĪ — GILGIT — PUNIĀL — INDUS FLOODS.

THE name written above is one that includes all the land inhabited by the Dārd race; but since that reaches beyond the bounds of the country I have set myself to describe, I must limit this chapter to that part of Dārdistān which is confined within the Maharaja of Kashmir's dominions.

In accordance with the plan previously adopted for other parts, I shall first show the geographical connection of this country with some that we have already become acquainted with by giving an account of the road between Kashmir and Gilgit, a principal place in Dārdistān. Then I shall describe different parts of that country, saying something under the headings of *Astor*, *Gilgit*, *Bawanjī*, and *Puniāl*. In the next chapter I shall speak of the inhabitants, of the Dārds themselves; afterwards, some account of the later events that have affected Gilgit and of the political state of the neighbouring valleys will be given.

THE ROAD FROM KASHMIR TO GILGIT.

This road is traversed by the Maharaja's troops and those who carry their supplies, and by few others. It is twenty-two days' march from Sirīnagar to Gilgit; the details of the marches will be found in Appendix IV. (Route 9 *b*).

The way usually adopted is to drop down the Jhelam by boat and cross the Walar Lake to a place called Bandipūr, whence the start by land is made. There is first to be crossed the ridge which intervenes between the Vale of Kashmir and the Kishangangā Valley. It takes more than a day to reach to the summit of this

The path zigzags up a spur for a rise of some thousands of feet and then comes to a part where the slope up is more gradual; here the ground is varied, being broken into sweet little flowery dells surrounded by fir-trees. The first halting-place is Trāgbal, 4000 feet above the level of the Kashmir Valley, an oval opening in the dark fir-forest, filled by a pond of artificial make. From some spots near we command view of the Vale we have left, and of the great lake and the marshes beneath us, and of the opposing Panjāl Range, whose peaks, separated from their base by a great depth of mist-hidden ground, catching the sun's light, looked like mountains of another world. From Trāgbal a rise of between 2000 and 3000 feet more, up the same spūr, brings us to the ridge. The Pass is hardly a depression in it. On the other side the road descends through somewhat similar but on the whole more wooded ground; after a day and a half's march from the ridge, the banks of the Kishangangā, at a place called Kunzalwān, are reached. Thus, then, in traversing 24 miles of road, or as the crow flies a distance of but 16 miles, and rising and descending some 6500 feet, we had crossed the northern bounding ridge of Kashmir.

The Kishangangā River rises 40 miles to the eastward of this spot, among the mountains behind Drās. At Kunzalwān it is a fine swift stream; as it goes on it receives the drainage of many lateral valleys in a country that is wooded, from which we may be sure it is one that has plentiful moisture; so the current increases in volume, until, when it joins the Jhelam at Muzafarābād, it has come to be one of equal importance with that river. There is a tract beginning a few miles below Kunzalwān where the valley is so narrow and the hill-sides so steep that, although the climate is favourable, no cultivation exists and there are no inhabitants, indeed, it is almost inaccessible.

From Kunzalwān our way leads up the valley. A short march past pine-covered hills brings us to Gurez, a chief village, of which the hamlets are little clusters of log huts. This place, which gives its name to the district, is where, for some four miles in length, the valley is rather wider than at other parts, being from

half a mile to a mile across; it is bounded on the south by wooded mountains, and on the north by a great steep cliffy limestone mass, which rises to 7000 or 8000 feet from the river. To the view the mountains join above and below, closing in the valley. The height of Gurez is 7800 feet above the sea. This elevation, combined with a great amount of cloud and rain in summer and of snow in winter, makes the climate inclement. In this and some other respects the place reminds me much of the valley of Pādar. Here the only crops are millet, buckwheat, and peas, which are raised by help of irrigation; rice will not ripen. The best produce of Gurez are the ponies, which are the best of their size for loads that I ever met with. In reaching this upper part of the Kishangangā Valley, we had already come into the tract occupied by Dārds; in the village of Gurez itself there is a mixture of Dārds and Kashmīrīs, but the former predominate. From there onwards the people are almost entirely of that race, and dialects of the Dārd language, a language quite different from Kashmīrī, are spoken. Where the two large streams meet, just above Gurez, is the end of the wider part of the valley. The southern stream may be said to be a continuation of the Kishangangā, as its course is the longer, and it has, I believe, the greater volume; it flows from the district called Tilel. If one had to go to Tilel one would not attempt to follow up the stream, for the gorge it here comes out of is impassable except when (for a week or two it may be) the river is frozen over; travellers must go a few miles up the other, the Burzil, stream, and cross a Pass which leads into the cultivated valley of Tilel. This I have never visited. Our own way leads for three days' march up the course of the northern stream. The valley of it is narrow, bounded by mountains rising some 4000 or 5000 feet; the stream flows for the most part in a rocky bed; for the first ten miles there are many little plateaus above the level of it, formed by the alluvium of side streams; over these the path leads us, past several small villages; on the mountain-slopes is a good deal of pine-forest; as the level of the valley rises the forest does not reach so high up the sides, and farther on the pine is replaced by spruce and silver firs.

From the place called Bangla a road for Astor and Gilgit leaves the valley and rises the ridge on the north; this has of late years come to be considered on the whole the easiest route to those places; the Pass just above (called Kamrī) is little over 13,000 feet, and the way is shorter by some five miles than the other. But the other is the one we will follow, continuing in the valley. There are now no more villages, though at one place, called Minmarg, a little buckwheat is grown (at an elevation of about 10,500 feet) by villagers from below, who come there in the summer, but the crop with difficulty ripens. At this place, and farther up the valley to the south-east, are moraine-mounds of old glaciers. The last halting-place on this side the watershed is at Burzil. Up to here there was no sign of a Tibetan climate; and as far as I, not being a botanist, could tell, there was the same vegetation, of forest, thick grass, and flowers, as in Kashmir.

At Burzil two roads part; one (spoken of in the last chapter) leads north-eastwards across the Deosai plateau to Skārdū, the other, going due north, will bring us to Astor. Following this latter, we rise, not very steeply, a height of about 2000 feet in five or six miles; the Pass, which is called Dorikun, is 13,500 feet high; it is not a defile, but a neck between the two parts of a rocky ridge; this is of granite, and the peaks here have a character not uncommon with that rock—they are massive in general form, but serrated and jagged at the uppermost edge; soon beyond the rock changes to slate and altered slate. Having crossed the Pass we are in the basin of the Indus; we are on the eastern branch of the Astor River. The valley in which this flows we now descend.

This Pass is crossed on the fourth march from Gurez; after gradually descending for three more marches, down the narrow valley enclosed by not very steep mountains, we come to where the eastern branch of the Astor stream falls in; it was along this latter that the other road would have led us that branched to the left some way back; then another few miles and we reach Astor. Of the two Passes crossed by these two roads the Dorikun Pass is the easier, and, although rather higher, is more practicable when under snow; it opens in the spring a few weeks earlier, and it

remains open in the autumn a few weeks later, than the other; the way, however, as before said, is some miles longer. Keeping back the account of the valley of Astor for another subject-heading, we will now just finish the route, considering it merely in the light of a road to be got over.

Astor we may count thirteen or fourteen marches from Sirīnagar. Thence five marches bring us to Bawanjī on the Indus. Down to this point laden ponies are not uncommonly brought, but there are many places very trying for them; the worst is the descent of the Hatū Pīr, a spur-pass just above Rāmghāt, one march short of Bawanjī. As far as Gilgit itself laden ponies are seldom taken, on account of there being a few spots where it would be very difficult, if not impossible, for them to pass. From Bawanjī to Gilgit there is a distance of three or four marches. One has first to cross the Indus; the passage is now easily effected by a ferry-boat; then the road leads some 12 miles up the Se Valley, whence we cross a 2000-foot ridge, after which we descend into the Gilgit Valley; one march along this brings us to Gilgit itself, over 230 miles from Sirīnagar.

Astor.*

We will now look more closely at the Astor Valley, through which we hurried. Its two chief branches have a length of 60 or 70 miles, reckoning from the source of each to the junction of the Astor River with the Indus. The more easterly of the two, that one down which came the road we traced, I have only seen under snow, and I have not much more to say about it.

At the head of the westerly branch is the Kamrī Pass, of 13,000 feet; the rest of the ridge being at heights of 14,000 and 15,000 feet. The descent on the north is steep for 1000 feet, and then the valley falls with a gentle slope. On this north side of the ridge a slight difference in the vegetation is observed as compared with that of the Gurez Valley; the grass less completely clothes the hill-sides; the brake fern does not so much abound;

* The Dogrās always call this place "Hasora," but its name in the mouth of a Dārd is Astor.

and the pine-forest is less extensive, while spruce-fir has become rare. Birch is found nearly up to 12,000 feet, and *Pinus excelsa* at 11,300. Some of the hill-sides have great stretches of birch-wood, which, as I saw them in autumn, made a glorious blaze of yellow, from the valley-bottom far up the mountain, enveloping detached woods of dark pine.

Coming down the valley we reach traces of cultivation at the level of 10,000 feet. First are detached hamlets and small villages, bare, with no trees round them. Then, at Rattū, are some apricot trees; at the next place are some small walnuts; while at Chagām, which is 8500 feet, are many fine walnut trees, and from there onwards the villages are mostly well shaded by fruit-trees.

But in that upper part it is chiefly traces of former cultivation that one sees; they are enough to show that crops will grow and ripen; but the fields are waste, the hamlets deserted. In most of the mountain-tracts we have hitherto gone over the population has increased nearly up to the limit of land available; but here is room for hundreds of settlers. This state of things was brought about by the raids of the people of Chilās. The Chilāsīs are a Dārd race inhabiting a long valley on the west of Diyāmir or Nangā Parbat. Until about 1850 they used to make occasional expeditions for plunder into this Astor Valley. Often they came over the Mazenū Pass to reach these higher parts, while for Astor itself, which they also attacked, they came round by the Hatū Pass and Dūiyān. The plunder they came for was cattle and people to make slaves of; their captives they do not sell, but they keep them for their own service, making use of them to take their flocks and herds to pasture. But since it would be almost impossible to keep grown men as their slaves at such work, where opportunities for escape would be plentiful, they used to kill the men and carry away only the women and the young people.

It was these raids that determined Maharaja Gulāb Singh to send a punitive expedition against Chilās; this he did in 1851 or 1852, I am not sure which; one force went direct from Kashmir, and one advanced by this Mazenū Pass. The Dogrās were in great straits for provisions, as the communications were

not well kept up, but they at last took the chief stronghold of the Chilāsīs, a fort two or three miles from the Indus River, and reduced those people to some degree of obedience. A few of the slaves were released, but most of them had been sent to neighbouring valleys for safety, and they could not be recovered; as late as 1869 some half dozen of them escaped, and returned to their homes in Astor. The expedition had the effect of frightening the Chilāsīs into good behaviour; there has been no raid since. There is even some communication kept up; the people from Tarshing, a village under Nangā Parbat, now go to Chilās, while from Chilās messengers or envoys come to the Maharaja with a yearly tribute and hostages, of whom a certain number remain in Kashmir until, after a year or two, others come in exchange.

It is curious that while the people of Astor are all riders and keep many ponies, these Chilāsīs have none, and they used not to attempt to take away any they met with in their raids.

The Astor people, who thus in later times have suffered so much, used formerly, when they were stronger, to do the same kind of thing. Gurez was liable to their attacks, and Drās also.

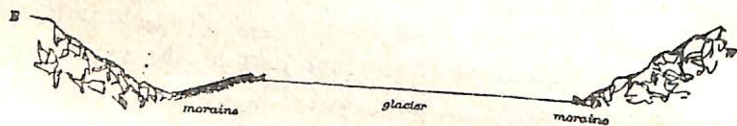
The present state of quietness and security is a great change for them all. But the country has not yet recovered the ruin and depopulation. Some new small settlements have indeed been made in the old village sites; attempts have been made to induce the Baltīs, who overflow from their own country, to settle; but the inclement climate of the higher part of the valley (where chiefly there is vacant ground), and the absence of the fruit-trees they are so much used to enjoy, deter them.

The most interesting place I visited in the Astor country is the valley which leads up to the base of Nangā Parbat. Just beyond the last village, Tarshing, one comes to the foot of one of the glaciers that spring from that great mountain.* I went

* The G. T. Survey Map is not accurate in the delineation of these glaciers; they do not in reality unite as there expressed. I have made the correction, as far as I could with certainty, in the map attached to this book. Other small mistakes occur in the Survey Map as to the position of streams and so on in the Astor and Rondū districts; these, though I was able to detect them, I had not time to rectify; so they have been allowed to stand in mine as in the Government Map.

to the glacier which comes down to Tarshing from the north; the level of its foot may be put down at 9400 feet. This is at the base of Nangā Parbat, which mountain towers above in a great snowy and rocky mass that appears like a gigantic escarpment. The glacier in its lower course has a slope of 4° or 5°, with a width of three-quarters of a mile or so; it is much broken by curved cross crevasses, and lengthwise by one long one. This glacier is fed by three or four steep branch glaciers which reach up the mountain, and there are one or two similar steep glaciers which end off before reaching the large ones. These side glaciers, whether the tributary ones or those of the secondary sort which do not unite their ice-flow with any other, are subject to another division into kinds—they may either, rising high up, be connected with snow-beds of the permanent snow, and in this case one cannot tell where snow ends and glacier begins; or they may end off suddenly upwards, being supplied only by falls of snow from above, which remains through most of the summer in taluses at the glacier's edge.

From the village northwards, for some three miles along the left bank of the glacier, is a great side moraine, the surface of which is now grown over with forest. The annexed section across, if looked at closely, will show the relationship of the moraines and the ice. From the hollow next the mountain-side on the east one



SECTION ACROSS TARSHING GLACIER.

ascends a very regular slope of perhaps 25° for a height of 400 feet; this is the old moraine, it is now covered with pine-wood. Beyond the crest of it is a little hollow, and then a second moraine heap, which, on the farther side, is bounded by a vertical cliff of 100 feet, at the foot of which is the glacier. On the right bank there is a representative of the inner one only of these two moraine-ridges. The moraine-cliff shows sections of large blocks among small stuff,

but here and there was just a sign of stratification, not continuing for far in any case; this stratified matter was, I have no doubt, deposited in temporary side lakes, such as we saw along the side of the Ārandū Glacier.* Following the glacier down we see that it abuts right against the cliffs on the opposite side of the main valley, to which this may be said to be tributary; it has not at all turned, nor diminished in thickness, but it ends off thus sharp against the rock; on the lower, easterly, face the ice is much cracked, and evidently is continually breaking off. I heard from natives of Tarshing, close observers, of some interesting changes in the state of the ice. It seems that up to 1850 it was in this same way jammed against the opposing rock, but at a higher level than now; that inner moraine-ridge is evidence of it having been at a level about 100 feet above its present one; at the time spoken of the whole surface of the glacier was smooth, uncrevassed; one might have walked, and indeed they used to ride, anywhere on it. The stream from the south-west, which drains other glaciers, found a way for itself underneath. Well, about that year or the next, in the winter time, the water-way got stopped up, and a lake began to accumulate in the valley above; as spring came the lake much increased; it must have been, at the last, a mile or a mile and a half long and half a mile wide, with an average depth of 100 or 150 feet, the extreme depth being about 300 feet. The people knew what was coming, and men were put on the watch; when at length the water reached the top of the glacier and began to flow over, word was sent down the valley, and all fled from the lower parts to the hill-sides; the water cut down a course for itself between the cliff and the glacier, and in doing so produced a disastrous flood that lasted three days. One near effect of the flood was to alter the course of the stream that comes down from the south, so as to make it at once fall into the main stream, instead of, as before, flowing along the near hill-sides; this cut it off from the alluvial

* I never thoroughly understood how such stratified deposits came to be mixed up with the irregular glacial accumulations until Professor Ramsay, on my describing them to him, gave me the above explanation.

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right side of the snowy Pass, and is always ready to advance to Gilgit if required. I know very little of the history of Astor. Bernier, who wrote about the year 1660, in enumerating the countries that border Kashmir, speaks of the territories of *Raja Gamon*. Now from geographical position I infer that this was the ruler of Astor. When the Sikhs held Kashmir, the Astor Raja was tributary to them; he had become so without any force having been sent; for a time he remained in quiet. But a curious thing happened. When Wazir Lakpat (who was lieutenant of Zurāwar Singh, who was servant of Raja Gulāb Singh, who was a tributary of the Sikhs) was victorious in Skārdū, he came over the Harpo Lā and invaded Astor. Lakpat besieged the Astor fort for four months; at the end of which time it was given up for want of provisions, and the Raja was taken away prisoner to Skārdū; and this though he was on terms of friendship and (in a degree) dependent on the Sikh Governor of Kashmir. At last, representations on the subject went to Lāhor, and from there Gulāb Singh received directions to desist from interfering with Astor, so the Raja was sent back. But not long afterwards the Sikhs themselves from Kashmir required a passage through the Astor territory on their way to Gilgit (as will be related in Chapter XIX.), and not only so, but they required to make their communications sure; with this object a Sikh post was placed at Astor, and from that time the independence of the Raja diminished; now there is a titular Raja, for whose subsistence some provision is made, whether by pension or from land I do not know.

At Astor and for many miles on there is one general character of the valley; at the bottom it is very narrow; the river is quite confined between the ends of great spurs from the lofty mountain-ridges on both sides; the cultivation is on very small spaces, usually some hundreds of feet above the valley-bottom. The hill-sides are partly broken into cliffs and partly of a smooth surface, grown over with grass in tufts, and with bushes of pencil-cedar scattered over, while in parts sheltered from the sun *Pinus*

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From Hatū Pīr there is a great descent, of about 5000 feet, by a zigzag road, steep and rough. We do not immediately reach the Indus Valley, but we go first to where the end of the Hatū spur nearly meets the mountain on the opposite side of the Astor River, leaving but a narrow channel for the water. Here the Astor River is spanned by two rope-bridges, made of birch twigs, and by a wooden bridge, over which ponies can be taken; a tower has been built that commands the passage; the position is held by some forty soldiers, who keep a good look-out. The place is a strange one; the soldiers live in caves in the rock; the rock overhangs, so as to keep off the sunshine for the greater part of the day; still the air becomes burning hot in summer; in winter, though no snow falls, the cold is somewhat severe.

Here crossing and following down the Astor River we soon debouch into the Indus Valley and find ourselves on the stony alluvial tracts, over nine miles of which, with small ups and downs, we have to go before reaching Bawanjī.

BAWANJĪ.

This is a spot where at one time was a good deal of cultivation, and it is likely that fruit-trees once shaded it; but during the wars of two or three generations back it was laid waste and became entirely depopulated, and nought but bare ground remained. At that earlier time it was inhabited by Dārds, but was ruled, as I am informed, from Rondū; it was by Sulaimān Shāh's invasion that it was laid waste.* At the present time Bawanjī has a very small area under cultivation, but the place is of some importance as a military post, since on the holding of it depends the passage of the Indus on the way to Gilgit. There is a fort which was built by the Dogrās; it is manned by about seventy men, and as many more are in barracks outside. There is here also a prison, where a gang of incorrigible Kashmīrī horse-stealers are detained; these men enjoy during the day some liberty for cultivating their plots of land. The valley here is warm and dry; with irrigation two crops can always be

* See Chapter XIX.

raised. In winter snow seldom falls, but on occasional years it may do so to the depth of an inch, melting away with the first sun. The mountains round are lofty, rocky, and bare; these increase the summer's heat. There is a fall of about 250 feet to the river Indus, which has here a width of 160 yards; the water flows smoothly, and has, I think, a considerable depth; the ferry is a mile or so above the fort. Immediately opposite comes in the Se stream, while the Gilgit River falls in a few miles above.

GILGIT.

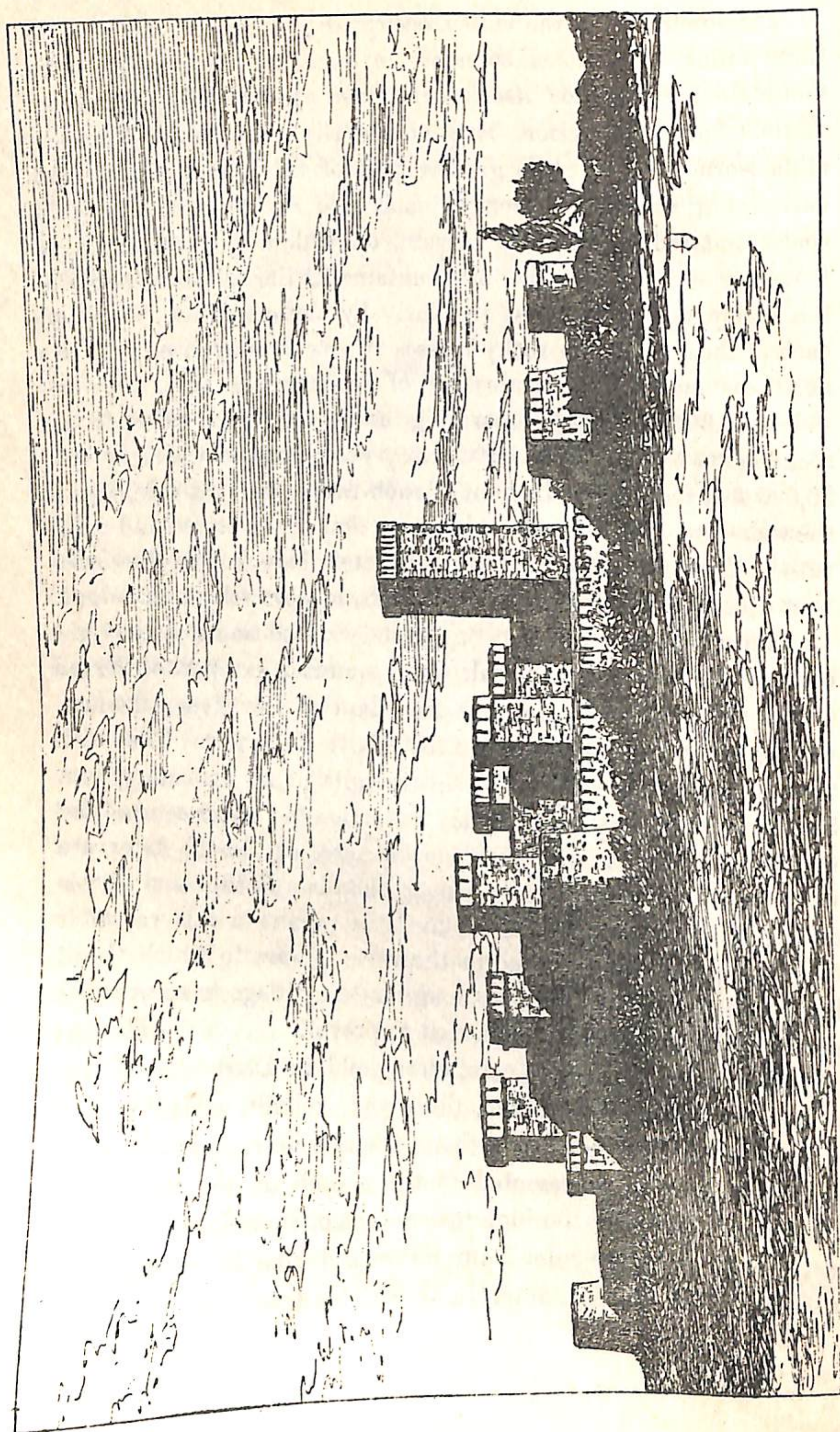
From the mouths of the Dārd people, when talking among themselves, in their own language, the sound of this name seemed to my ear such as would properly be represented by the spelling *Gilyit*.* But all people of other races who have had occasion to use the name—Kashmīrīs, Sikhs, Dogrās, and Europeans—have caught the sound as *Gilgit*, and used this form until it has become so much known that it would be inconvenient, not to say useless, for me to attempt to change the name.

The district of Gilgit consists of the lower part of the valley of a river tributary to the Indus, which, rising in the mountains that bound Badakhshān and Chitrāl, flows south-eastward until it falls into the great river, a little above Bawanjī. The length of the course of this Gilgit River, speaking roughly and only following the greater changes of direction, is 120 miles, which are thus divided,—Yāsīn includes a length of 60 miles, Puniāl of 25 miles, and Gilgit of 35 miles. Yāsīn is beyond the Maharaja of Kashmir's boundary; Puniāl is within it, being governed by a Raja dependent on and aided by the Maharaja's power; Gilgit is administered directly by the Maharaja's officers. This refers only to one line of valley—the main one; besides this there are important branch valleys belonging to Yāsīn, and there is a long tributary valley on the north-east, which is occupied by two other small states—Hunza and Nagar.

* Vigne says that the real name of Gilgit is said to be "Gilid." Dr. Leitner speaks of "Ghilghit or Gilīt."

The lower part of the valley, occupied by Gilgit, is from one to three miles wide; it is bounded on each side by steep rocky mountains; the valley itself contains stony alluvial plateaus of various form, and various level above the river, which flows in cliffs worn in them; the greater part of this space is arid and barren, but, as usual, in front of each side ravine is a cultivated space, watered by the side stream, on which is a collection of houses. The line of mountains on the south-west side of the valley is divided most regularly by these ravines; between each of them the steep rocky masses narrow as they rise. On the north-east side the mountains are of an enormous size; they are well seen from the ridge separating the Se and Gilgit valleys; the rocky spurs lead back to lofty snowy peaks, one of which is over 25,000 feet in height. In front of each ravine on that side, too, is the wide-spread alluvial fan, with a portion of it watered and cultivated. There the mountains are completely bare, but on the south-west side, high up above the lower cliffs, is a growth of pine-wood.

The village of Gilgit is on one of the watered tracts on the right bank of the river; here the cultivated ground is not part of the fan of a side stream, but is on the flat plain of the river alluvium, which makes a terrace 30 or 40 feet above the water. The cultivation occupies the space of a square mile or so, extending from the river bank to the mountains; the irrigating water comes from the nearest side stream. The houses here, as also in Astor, are flat-topped; they are scattered over the plain in twos and threes among groups of fruit-trees, having been rebuilt in this way after the destruction that occurred in the various wars to which Gilgit has been subject; it will take long for the village to recover the abundance of fruit-trees which used to prevail. The fort of Gilgit is the Maharaja's chief stronghold in Dārdistān. It has been at different times taken, destroyed, rebuilt, added to, and altered. In 1870, when I was there, the appearance of it from the south-west was as represented in the sketch on the next page. The central part with the high towers (one of them loftier than the rest) was built by the ruler Gaur Rahmān during his second reign in Gilgit when the Maharaja Gulāb Singh's troops had been for a



Stanford's Geogr. Estabt. London.

time dispossessed of it; this is built in the Dārd style, of a wooden framework for the wall filled in with stones; it was really a strong work for the country. The next outer construction is the work of the Dogrās; it is a wall some 14 feet high, built round three sides of the inner fort (the fourth being protected by the steep river bank), so as to enclose a space between the two for 200 or 300 men to live in; of the seven or eight towers of this outer fort two can mount a gun. Lastly, built cornerwise on to the fort, was what was called the *Sangar*—a space enclosed by a poor stone wall; in this were quartered two or three hundred irregulars.

But since this sketch was made, since I saw the place, changes have occurred. In the spring of 1871 a severe earthquake threw down a considerable portion of the fort, and it has now, I believe, been rebuilt on a better plan.

Gilgit, by my reckoning, is 4800 feet above the sea. Mr. Hayward put it down as 5025 feet; but I think the former figures, which are derived by Boiling Point observations from Bawanjī, whose elevation is given by the G. T. Survey, to be the nearer. The climate of Gilgit is not unlike that of Baltistān, only less snow falls, indeed but little snow-fall occurs. The vegetable products are the following—wheat, barley, naked barley, rice (in Gilgit village only), maize, millet, buckwheat, pulse (mungī, mān, and massar), rape, and cotton; and of fruits—mulberry, peach, apricot, grape, apple, quince, pear, greengage, fig (not in any perfection), walnut, pomegranate, and sarshing (*Elæagnus Moorcroftii*, called there anāb, sarshing being the Tibetan name); besides musk-melons and water-melons. Silk is grown, but in very small quantity; the worm is smaller than that of Kashmir, and the cocoon is small. There are three fabrics made of it; one half silk, half wool, this is much worn by those in station above the ordinary peasant; another half silk and half cotton; the third all silk, a strong though loose-wove fabric which is prized for kamarbands.

Gold is washed from the river-gravels, as in many other parts of the Indus basin; here it is in coarser grains than I have seen elsewhere, and the return for the labour of washing is somewhat better.

PUNIĀL.

Four miles above the village and fort of Gilgit the valley narrows; still there is generally a bit of alluvial plateau on one side or other of the river; a few villages are passed and sites of deserted villages. For a day's march up one is still in the district of Gilgit, which is conterminous with the old Rajaship of Gilgit. Between the villages of Sharot and Gulpūr this district ends and Puniāl begins.*

Puniāl is a part of the valley which had long been held by separate Rajas, sometimes I think independent, sometimes depending on one or other of their neighbours—Yāsīn and Gilgit. The last result of the wars and disturbances that for some generations so much affected these valleys has been to leave Puniāl to a ruler of the line of its old Rajas, but under the protection of and in close dependence on, and, in those matters in which interference might be called for, in obedience to, the Maharaja of Kashmir. The district thus held is simply the line of the main valley, all along narrow, from Gulpūr up to the village and fort of Gākūj. This is a length of some 25 miles; within it there are nine villages and two or three outlying patches of ground cultivated from the nearest; these villages vary in altitude from 5500 feet to nearly 7000 feet; the chief place is Sher, on the left bank, where the Raja dwells. A characteristic of this part of the valley is that often, after every few miles, one comes to a place where the space is narrowed for a short distance by spurs coming down, so that the passage along is extremely difficult; the name given to these places is *darband*, or "shut-door"; they are of much importance from a military point of view, since at each of them a few might stop an army for a time; but there are usually two roads by which they can be passed—a very difficult one, fit only for agile foot-passengers, along the cliff, and a bridle-path that

* I believe that originally Gulpūr itself was under the Gilgit Rajas, and that it was granted to Puniāl in dowry of one of the daughters of the house. The present actual boundary between Gilgit and Puniāl is the stony and sandy plain between Sharot and Gulpūr.

leads a thousand feet or more above; again, in winter, they can sometimes be turned by twice fording the river.

That we have here come to a country exposed to the attacks, or, at all events, the alarms, of surrounding enemies is shown by the arrangement of the villages. At Sher itself, and from that place onwards, all the villagers, with their wives and families and their cattle, live within the fort; village and fort are here synonymous. *Sher Fort* is the strongest hereabouts; it has one face to the bank of the river, whence its supply of water cannot be cut off; all four sides are lofty walls with towers, much in the style of the inner work at Gilgit, but not quite so regularly built. Inside, the whole area is covered, huts are built over it all; these huts are mostly of three stories, the lowest is occupied by the cattle, the second is the usual dwelling-place, and the third is the summer living place; they are lighted by small openings in the roofs. The Raja has a nice set of rooms in one corner. Besides the country-people, there are 100 irregular sepoys of the Maharaja's army quartered in the fort; they occupy the part next to the walls, while the villagers have the centre. Thus the place is very much crowded. *Bubar*, which is also on the left bank, some 15 miles up (6000 feet above the sea), is in the same way a place where the villagers live in the fort; this is a large and prosperous village thick in fruit-trees. Vine is much cultivated; it is grown in small vineyards with the plants at irregular distances, many being old trees; the whole of the vineyard is covered with a framework of sticks supported at a height of from two to four feet above the ground, and over this the vines are trained; some of these vineyards are immediately beneath the walls; they are considered as a good defence to the fort; I think it more likely that the fort is a good defence to the vineyards, which are apt to suffer in a war. Bubar Fort is not quite so strong as Sher, still it is reckoned one of those which cannot be taken by force—the alternative, treachery, is not an uncommon weapon in these countries. *Gulmutī*, *Singal*, and the other villages in this part of the valley, have the dwellings similarly enclosed in forts.

At evening, the people, who have been occupied in their fields during the day, all come with their cattle within the walls and the gates are closed; all night sentries watch on the towers, and every half hour the "All's well" resounds through the stillness, though it may get less frequent towards the sleepy hours of morning. At dawn an armed party go forth and make the round of all places that might possibly harbour an enemy, and not until their search has proved that the village is clear do others issue for their ordinary avocations. At the time I marched up the valley the Maharaja's relations with the Yāsīn chief were in a doubtful state, on account of the murder of Mr. Hayward, for which we were trying to get reparation; these precautions, therefore, may have been more than usually attended to. I did not myself lodge within the forts, but, having an escort of 200 men from Gilgit, we were able to keep such a look-out as effectually to prevent any surprise.

The highest point in the valley that I went to was Gākūj. This is the last village in Puniāl; it is the farthest in this north-west corner to which the Maharaja's power or influence extends—and hence it is the farthest to which the influence of the Government of India reaches. Gākūj is, by my observations, 6940 feet above the sea; it is on a knob of rock behind which is a sloping plain, all this being 700 feet above the river. It is a cold windy place; snow falls there in winter to a depth varying from 6 inches to 1 foot 6 inches, and it stays three months; here only one crop is grown, while near the level of the river, 600 feet down, two crops are got from the land.

There is a strong fort at Gākūj, containing within it a spring of water; the garrison is composed of the villagers—about fifty fighting men. Part of the plain is cultivated, but beyond that part stretches a narrow stony plain backed by mountains 3000 feet or so high, their sides dotted with pencil-cedar bushes with pine-forest above; this strip of plain extends some eight miles up the valley, at which distance a spur from the mountains comes down and juts against the river, making a natural barrier. This spot, called Hūpar, is the extreme point of the Maharaja's territory;

here the Puniāl Raja has a guard of six men, who, on signs of an enemy approaching, would light a signal fire; for this reason no cooking of food is allowed there, so the look-out party take a few days' provisions ready cooked, to last until their relief. To hold the position would require one or two hundred men. There are two roads past it, one of them only can be traversed by horses. At three other places is a guard kept. One on the left bank of the Gilgit River, a little lower down than Gākūj; one is on the left bank of the Ishkoman River (which falls in from the north above Gākūj) and one on its right bank, near, I think, its junction with the main stream; while in summer a guard is pushed nearly a day's march up the Ishkoman Valley. The object is to reach the best look-out place at each particular time of the year, and this must vary as the rivers become fordable or impassable. The Yāsīnīs have a guard at a place called Shedodas, on the left bank, opposite to Hūpar.

It was in November, 1870, that I went through Puniāl. The ruler is Raja Isā Bāgdur (a name sometimes corrupted by strangers to Bahādur). We were together for several days; we travelled in company, and nearly every day I joined him in a game of polo; with such intercourse we naturally became well acquainted. He is a man who has long been at enmity with the Yāsīn family, and now entertains the most lively hatred of them; in the various tides of invasion he has had to flee from his territory and take shelter now in Gilgit, now in Chilās, and now in Kashmir. On the re-conquest of Gilgit by the Maharaja (which will be related in another chapter) he was replaced in his own country, which ever since he has held in faithful dependence on the Maharaja's Government, often under difficult circumstances. Though an old man he is strong and active; he is a capital, even a renowned, rider. In character he is both brave and politic, at the same time cautious and enterprising. He is much feared by his enemies and liked by his people; these obey him implicitly; it is their custom, on meeting him, to go up and kiss his hand; this, I believe, to be the general old custom in Dārdistān, or at all events in that part of it where the government is monarchical.

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the subject of much inquiry as to its origin, and differing opinions have been and perhaps still are held about them. I wish now to add something to the facts from which conclusions must be drawn, and to see whether we shall not then have evidence from which we can form a firm and stable opinion.

The flood of 1841 was in this wise. It occurred, as near as I can make out, in the beginning of June of that year. At Atak, a place 12 or 15 miles below where the latitude-parallel of 34° crosses the Indus, the river had been observed during several months, indeed from December of the previous year onwards, to be unusually low; in the spring it had risen a little from the snow melting, but only a little, so that at the end of May (when in ordinary years the volume has greatly increased) it was still extraordinarily low. This in itself should have been enough to warn the people who dwelt by its banks, but so little was it thought of that a portion of the Sikh army was encamped on the low plain of Chach which bordered the river. One day in the beginning of June, at two in the afternoon, the waters were seen by those who were there encamped to be coming upon them down the various channels, and to be swelling out of these to overspread the plain in a dark muddy mass, which swept everything before it. The camp was completely overwhelmed; 500 soldiers at once perished; only those who were within near reach of the hill-sides could hope for safety; neither trees nor houses could avail to keep those surprised in the plain out of the power of the flood, for trees and houses themselves were swept away; every trace of cultivation was effaced; and the tents, the baggage, and the artillery, all were involved in the ruin. The result is graphically expressed by Captain J. Abbott, who wrote, "Chach has been sown with barren sand," and by his informant, a native eye-witness, whose words were, "As a woman with a wet towel sweeps away a legion of ants, so the river blotted out the army of the Raja."*

* My sources for this account, besides the oral description of one, a Sikh writer, who himself narrowly escaped, are chiefly a letter from Dr. Falconer in the Journal of the Asiatic Society of Bengal (vol. x., 1841, p. 615), and a notice by Captain J. Abbott in the same journal (vol. xvii., pt. i., 1848, p. 230). In the latter communication there is a mistake as to the date of the occurrence; the time given by the

Inquiries as to the place and mode of origin of this flood, which were made by several officers at different times, resulted in two theories. The first was that the deluge was due to the breaking of the icy barrier of a lake which had been known to form above a glacier high up near the source of the Shāyok Valley, at a place called Kumdan; this view is taken by General Cunningham in his book on Ladākh, and Captain Henderson also adopted it.* But by those who held this opinion the argument never was answered, "How could the interception of the waters of one branch near its source cause such a drying up of the river as was observed, while scores of streams of equal volume with the one at the head of the Shāyok still were pouring in their tribute?" It is this previous fact of the decided lowering of the river that made others look for the cause of the deluge on the main Indus, below the falling in of the Shāyok. The true position of the barrier (whose formation caused the waters to accumulate, and the breaking of which loosened them) was ascertained by Major Becher, who was on duty in Kashmir in 1858 or 1859, and who then made inquiries through the Maharaja's officials, which resulted in his acquiring information which my own entirely corroborates. Since I myself saw the spot, and made inquiries on the spot, it may be well for me to give my own information; the reader will see how it corresponds with what Major Becher wrote, the gist of which is here subjoined in a note.†

Hindū reckoning—the middle of Jayt, 1898—really corresponds to the end of May or beginning of June, 1841, and not, as there put down, to the 1st May, 1842. That 1841 was the year there can be no doubt, since Dr. Falconer wrote on the 6th July, 1841, on receiving news of the event. The exact day I have not been able to determine, but it cannot have been far from the beginning of June.

* See Journal Asiatic Soc. Bengal, vol. xxviii., 1859, p. 199.

† In a letter to the Secretary to Government, Punjab, given in the Journ. Asiat Soc. Bengal, vol. xxviii., 1859, p. 219, Major Becher expresses his disbelief in Cunningham's account of the flood, and says that it was caused by the arrest of the main Indus, across which a mountain called Ultoo Kunn subsided at a narrow place about 5 coss (a coss being either 1½ or 2 miles, one cannot be sure which) south of Ghor, that Boota Khan, a native of Ghor now in Cashmere, gives the most exact account—he saw the actual dam, and some men of his village were buried by the fall of the soft-soiled mountain, which he attributes to an earthquake. Major Becher then corroborates the above account by copies of news-letters written at that time from Cashmere to Sir George Clerk. The news-writer says, "From Hussoora (Astor) and Gilgit news has arrived that in last January a mountain (by reason of an earth-

At the time I was in those parts I was not aware of what Major Becher had written, and might very likely have passed along without thinking of the subject of the flood; but on reaching the summit of Hatū Pīr, after taking in all I could of the grand mountain view it gives—which reaches as far down this Upper Indus Valley as anyone of my nation has ever seen or been to—I got talking to a man who belonged to the village of Gor, opposite, who told me of a landslip that had occurred in the first ravine below Hatū Pīr, either just at or just below the bend of the river; he said that the débris of this landslip had dammed the river and made a lake which had extended up to Gilgit. Thus put on the track, I made inquiries from many people and found that truly this was the spot where the obstacle had occurred. It seems that in the late autumn (of the year 1840 it would be; these informants are not exact as to a year) the landslip occurred, of which the immediate cause was an earthquake. I saw the heaped material, but was unable to get to the very place. The amount of it was enough to cause the waters of the Indus to rise to the level of Bawanjī Fort, just on to the plateau, which is about 300 feet above the ordinary level of the river near, and still more above the river-bed by the dam. With such a depth as this it will be understood that the lake must have extended far up the valley. I know not to what point on the Indus it reached; up the Gilgit Valley it stretched to where the Hunza stream falls in; the length of the lake, therefore, in that direction must have been 35 miles, with, at half that distance, a branch leading up the main Indus Valley, along which branch also, from the lower end, it would have measured at least that length. It is difficult

quake) fell into the Indus or Attock River, and has closed the course of its stream. Up to the 1st May 12 coss of land in Gilgit District has been submerged. Jubbar Khan, the chief of Hussoora, sent in a note to Cashmere that the waters would continue pent up for another month, and after that would force a passage in some direction." Again, in June, 1841, he writes, "From Gilgit the news is that the waters of the Sinde or Attock River, by reason of a fall of a mountain, were brimmed up in the direction of Gilgit for a long time, and there was a lake reaching to a distance of 18 coss; high hills were on all sides; when it had risen immensely, the river forced its way with great velocity, and is now pursuing its natural course; many villages of Yusoofzaye, Chuch, and Huzara have been destroyed by the deluge."

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side of a connected valley; this process we saw going on with the Tarshing Glacier under Nangā Parbat.

The next flood of which we have a record is the second of those two great floods first mentioned—the one that in the year 1858 did so much damage at Naushahra. My information about this is derived chiefly from the above-quoted letter of Major Becher, from a Memorandum by Captain Henderson which precedes it, and from papers by Captain Montgomerie and Mr. Obbard.* The following is the description of it. At 5 A.M. on the 10th August, 1858, the Indus at Atak (Attock) was very low; at 7 A.M. it had risen 10 feet; by half an hour after noon it had risen 50 feet, and it continued to rise until it stood *ninety feet* higher than in the morning. The fall was very slow; during the 12th August it returned very much to the position it occupied before the flood came. Captain Henderson speaks of the water as "welling up quietly but very rapidly," and says that four hours after the rise began, and three and a half hours before the maximum, he crossed the river in a boat. This flood also produced difference of opinion as to the place of origin of it. Some said that the flood of 1841 and this one both came from the same spot, near the head of the Shāyok Valley. But the inquiries made by Majors Becher and Montgomerie cleared up the doubt about this also. The Maharaja's people up and down the Indus were asked for information; the only news of a flood which came in answer was from those at Bawanjī, where a great flood had been noticed by the sepoys, and timbers were seen floating which they recognized as the gateway of Nūmbūl Fort. Now Nūmbūl is no other than Niomal, a place a little way up the valley of the Hunza River. From this and other evidence obtained from them, there remains no doubt that the flood came from that valley. My own inquiries at Gilgit brought me to the same conclusion; I was told that in three or four places in that valley the flood had carried away the half of a village-fort; these, doubtless, were where, for the sake of a water-supply, the fort had been built at the edge of an alluvial cliff; I heard also that Shams, a village of Hunza, was carried

* For both of these see Journal Asiatic Soc. of Bengal, vol. xxix., 1860.

away altogether. As to the cause, my informants said that it was the bursting of the barrier of a lake that had been made by a landslip, not by a glacier, in the Shinshāl Valley.

One other flood I may mention. In the year 1865, one evening in the month of Hār, which corresponds with the latter half of June and the first half of July, at 9 or 10 P.M., a flood, which originated in the Ishkoman Valley, passed Gilgit. It came very suddenly indeed, and it lasted but a few hours. The guard at the rope-bridge by Gilgit Fort were surprised and carried away by it; five of them were drowned; the sixth, being supported by a log of wood he had come in contact with, was saved, being stranded two miles below.

A theory has been formed, and supported with much ability,* that in such cases as the two great floods of 1841 and 1858 the rise of the water at, say, Atak, was not due to the arrival of the very water that had been pent up and then let loose, but was a wave transmitted all down the river from the spot where the dam broke—a wave started by the sudden impinging of the water of the lake, or of the breaking dam, or both, on the river-water, down which, it is supposed, the wave travelled, like as in a trough full of water you may, by letting something fall, send a wave along without the passage of any particle of water along the length of it.

After considering the arguments for and against this theory, I find it very difficult to form a conclusion, but on the whole I incline to believe that the floods were caused by the actual arrival of the pent waters, and were not waves in the river. True it is that Captain Henderson's description of the flood of 1858, of its gentle rise, and the steadiness of the current during the rise, make that particular flood look more like a wave-rising than a down-rushing of the waters. It may be that this flood was really a wave, and that the one of 1841, of which the description is very different, was not so. If so, the cause of the difference may be found in this, that in August, 1858, the Indus was much fuller

* See the papers in the Journal Asiatic Soc. of Bengal, vol. xxix., "On the Translation of Waves of Water with reference to the Great Flood of the Indus in 1858," by J. Obbard; "On the Physical Difference between a Rush of Water down a Channel and the Transmission of a Wave down a River," by Archdeacon Pratt.

than in June, 1841 (when, as we have seen, the river was much dried up), and so was more likely to transmit a wave. But the considerations are many which lead me to doubt the possibility of such wave-transmission down such a river as the Upper Indus. Some of the objections had been stated by Archdeacon Pratt, who did not stand forth as an advocate of the wave-theory as applied to these particular cases, though on the whole he inclined to it. The general shallowness of the river as compared with the great height of the wave at Atak is a difficulty in the way of this theory, for waves require depth for their transmission; and the *irregularity* of the river-channel in depth and width would render difficult the passage of a wave for such a great distance, for in meeting with so many changes as there are in that course the wave, supposing it had started, might have been so retarded as that the waters themselves of the lake should have overtaken it, and then, probably, it would have been masked by the flood proper; again, the bends of the river, by adding to the friction, would tend to the same result. These affect the question of the transmission of a wave. But there is a great doubt in my mind, whether the dam-breaking was an event of such a character as to *produce* a wave. There does not seem, at all events in the case of 1841, to have been a sudden giving way of the dam, not a slipping of a whole mass of débris, but rather a sweeping out of a channel through it, which let pass the waters more or less gradually. On the other hand it has been said that the passage of the flood from point to point was so quick that it seemed more like the translation of a wave than the passage of water itself. If so, this is an important argument; I have not myself seen records that clearly prove such a rate of passage. The subject is still one of great doubt; the wave-theory seems to me at all events "not proven."

CHAPTER XVIII.

DĀRDISTĀN: THE PEOPLE.

GENERAL DESCRIPTION OF THE DĀRDS — CASTES — MUHAMMADANISM AMONG THE DĀRDS — BUDDHIST DĀRDS — SUNDRY NOTES.

THE existence of the Dārds as a separate race, as well as something of their language, have for a good many years been facts within the reach of readers of travels; but the information made known about them has till lately been extremely meagre. Dr. Leitner has collected and appended to his own work the previously published notices about this people and their country, and these show how very little knowledge there was on the subject. Dr. Leitner visited Dārdistān in 1866, and, having supplemented his inquiries of that time by investigations into Dārd dialects and customs made through men of the race whom he gathered round him at Lāhor, he has given the results in a work that is of the greatest value to all who take interest in tribes that have long lived separate, unknown to all but their nearest neighbours, and a knowledge of whose relationships may throw light on some of the most weighty ethnographical questions.*

Dr. Leitner's researches in the various dialects; the great amount of knowledge of them which he, while his opportunities were still imperfect, acquired; the philosophical acumen shown in mastering much of the grammar of these unwritten languages; these command high admiration. The songs and proverbs he has recorded and thus preserved from oblivion, make another part of the book for which the hearty acknowledgments of the public are due.

As to the 'History of the Wars with Kashmir,' given in the same work of Dr. Leitner's, as taken down from the statements of

* 'The Languages and Races of Dārdistān,' parts i., ii., and iii., by Dr. G. W. Leitner.

a native of Sāzīn, there are in this many exaggerations and inaccuracies—so many, indeed, are they, and so difficult is it to wash free from them the grains of truth that are mixed up, so confused is the whole tale, that the account is of but little value. The 'Rough Chronological Sketch' given in Part III., p. 81, is of more accuracy. Dr. Leitner himself would be ready to admit that such a history, derived as it must be from the mouths of a few, who could not have been eye-witnesses of most that they told, must be but approximately true. In the next chapter of this book will be given the version of the history (from information obtained in much the same way) which I myself conceive to be nearest the truth. I was careful to get accounts from both sides whenever it was practicable, and I believe that as much as I have ventured to put down is not far from right.

Mr. Hayward, who travelled farther into Dārdistān than either Dr. Leitner or myself, made a map of the Gilgit River basin, which is a great addition to our knowledge; this, with other geographical information of much value derived from his personal observation, is to be found in the Proceedings of the Royal Geographical Society for 1870. Mr. Hayward's view of the later history of Gilgit and Yāsīn, and of the political situation, as expressed in a letter to the 'Pioneer' newspaper, which is reproduced in Dr. Leitner's Appendix, is so evidently coloured by the source from which it came—the mouth of Mīr Wallī, the man who afterwards treacherously murdered Hayward, but who at first made him, for his own purposes, his friend—that one cannot take it as a sober statement of facts.

I must now pass on to tell what I myself have observed of these Dārds; Dr. Leitner's account and mine will, I think, often be found to supplement each other, and on the subject of ethnology only to differ in minor respects.

GENERAL DESCRIPTION OF THE DĀRDS.

Whether we judge from language or from physiognomy, the conclusion is inevitable that the Dārds are an Aryan race.

For physique; they are broad-shouldered, moderately stout-

built, well-proportioned men. They are active and enduring. They are good as mountaineers, and those who have been used to act as porters are strong and quick in the work; but in some parts they have never been trained to coolis' work, and will not undergo it. In face they can in general hardly be called handsome, but still they have a rather good cast of countenance; their hair is usually black, sometimes brown; in complexion they are moderately fair, the shade is sometimes, but not always, light enough for the red to show through it. Their eyes are either brown or hazel. Their voice and manner of speech is somewhat harsh; those who have learned Panjābī have a particularly hard way of speaking that language.

The photograph given of a group of Dārds (after Frith) is an admirable representation of some men of the race who live in the neighbourhood of Drās; these fellows are as hardy and enduring as any men I have ever met with; though living in the most trying circumstances of climate, they are not oppressed or weighed down by them, but keep such a cheerfulness as the inhabitants of the most favoured climes and countries may envy.

The disposition and bearing of the Dārds is independent and bold; they will not endure to be put upon, but stand out for their rights, and stand up against oppression as long as possible. They are by no means soft-hearted; but they are not disobliging when taken in the right way. For intellect, it seems to me that they are, as a race, decidedly clever; if not so ingenious as the Kashmīrīs, yet they are both clear-headed and quick.

Such qualities as these make them a people that one must sympathise with. A people who are bold and, though not caring much for human life, are not bloodthirsty; a people who will meet one on even terms, without sycophancy or fear on the one hand or impertinent self-assertion on the other; such are not so often met with in the East but what one welcomes and values them.

The women, of the districts I went through, I did not consider pretty; those of Gilgit are better than those of Astor, but few of them could be called good-looking. Yāsīn, a place I could not visit, has a greater reputation for female beauty.



D Ā R D S

The dress of the Dārds is woollen, except among the higher people, who wear cotton clothes for the summer if they can get them; the dress consists of pyjamas, choga (or gown-coat), a waistband to confine this, and lastly, a cap and *chaussure*, both of peculiar construction. The cap is a bag of woollen cloth half a yard long, which is rolled up outwards at the edges until it gets to the size to fit comfortably to the head, round which the roll makes a protection from cold or from sun nearly as good as a turban. For their feet they have strips and scraps of leather put under and over and round the foot, and a long thin strip wound round and round to keep all these in place. The head-dress is thoroughly characteristic of the Dārds; wherever they are scattered, and with whomsoever they are mixed up—with the one exception of the Búddhist Dārds to be mentioned below—they keep that kind of cap.

CASTES.*

There are certain subdivisions of the Dārd race which may be called castes, since they are kept up by rules more or less stringent against the intermarriage of those who belong to different divisions. To trace these out is a matter of much importance, for they probably give indications, if one knew how to interpret them, of the sources from which the present community has been compounded, and of the order of successive occupations of the country, and of the supremacy of different nations.

According to my inquiries, the following are the important caste divisions in the order of their recognized rank:†

(1) Ronū. * * * *	(2) Shīn. (3) Yashkun.	(4) Kremin. (5) Dūm.

As to the first, Ronū, I am not clear whether any importance may be attached to the division. In no other account have I seen the name mentioned, but in the Gilgit country it is certain that a

* The substance of this and the next division of the chapter was communicated in a paper which I read to the Oriental Congress that met in London in Sept., 1874.

† Besides these, I have in one village, Tashgām near Drās, heard of a caste called *Rom*. I was unable to find out the extent or relative importance of this caste, or to collate it with the others.

small number of families are of a caste called Ronū, and that they are held higher even than the Shīn. It is possible that this rank is derived from their having in former generations held some offices of power, hence the caste could not be wide-spread; as, however, it may be a clue worth following out, I record the fact.

The remaining four castes are of undoubted importance in an ethnographical view. These are the same divisions as are given in an account of the Chilāsīs by Captain Ommaney, in the Panjāb Government Gazette, of Feb. 28, 1868, quoted in the Appendix to Dr. Leitner's work; and they are also spoken of as the four primary divisions by Dr. Leitner's informant, a Sazīnī; Dr. Leitner himself, by adding the names of many other castes (which I incline to think are subdivisions), makes less of this fourfold separation, and he inverts the positions of Kremin and Dūm.*

Beginning with the lowest of the four; we find the *Dūms* acting as musicians, like the low-caste Marāsīs of the Panjāb and the Domes of other parts of India, and like also the Bems of Ladākh and the Bātals of Kashmir. It will be remembered, too, that the lowest caste at Jummoo—the outcasts to whom was relegated the lowest kinds of work—is called Dūm, though there the musicians and dancers are not taken from among them. Thus all through these hills, in all the different nations, we find a lowest caste, one everywhere treated as unfit for ordinary social intercourse, corresponding in all the cases either in name or in occupation, or sometimes in both. It is true that in each nation that lowest caste has something of the general characteristics of the nation as a whole. In every case their language is the same as that of those they live with, and has no connection with that of the similar caste in the neighbouring nation. In form and features they are somewhat like and somewhat different from those who are in some measure their masters; we saw that the Dūms of the Outer Hills differ in form and complexion from the men of the higher castes, and that the Bātals of Kashmir by no means equal the ordinary type of Kashmīrī. Of the Bems of Ladākh and the Dūms of Dārdistān I hardly saw enough (for in truth they are few in number) to be able to

* 'Dārdistān,' part ii., p. 25, and part iii., p. 48.

generalise about them in respect of this. But even a resemblance more or less complete would not, in my opinion, outweigh the probability derived from the other facts, that in all these cases we have remnants of the early, pre-Aryan, race that inhabited India. If this be so it is a new, and I think unexpected, fact, the existence of this race among the high mountains and in the snowy country.

The *Kremins* seem to correspond in function with the *Kahārs* of India (the Jīwars of the Panjāb), for they act as potters, millers, carriers, &c. Thus they are analogous in position to the Sūdras of India, and it seems likely that they had an analogous origin, that they are descendants (with some intermixture of blood) of those of the aborigines who earliest and most easily coalesced with the nation that overcame them. I do not find the Kremins very numerous; certainly there are not many in Gilgit.

The *Yashkun* is the most numerous of all the castes. In Gilgit and Astor they are the body of the people, whose chief occupation is, of course, agriculture. Dr. Leitner speaks of the Yashkun as "a caste formed by the intermixture between the Shīn and a low (? aboriginal) race"; this view does not recommend itself to me; it is more likely that the Kremin had some such origin, but that the Yashkun, who follow all the same occupations as the Shīn, and in physique and physiognomy are their equals, should have so originated is far less probable. I am inclined to think that they and the Shīn together made up the race (which we may call Dārd) that invaded this country and took it from the earlier inhabitants. What may have been the origin of that (probably previous) division into Shīn and Yashkun is a point both curious and important—a question which at present I see no way of solving. Dr. Leitner's information that a Shīn may marry a Yashkun woman, while no Yashkun may marry a Shīn woman, is highly interesting; this custom is just like that described in Chapter III. as followed by the Rājpūts in connection with the cultivating classes; here I would again point out the natural corollary to be drawn from it—that the higher race thus remains less pure (that is less separate) than the lower.

We now come to the *Shīn*, the highest of the four generally-distributed castes. In some isolated places they make the majority, or even constitute the whole, of the community, but in Gilgit itself they are not so numerous as the Yashkun, nor are they so in Astor.

There is a peculiarity of manners most strange and curious attaching to some of the Dārds. It belongs especially, perhaps even solely, to this Shīn caste. Attention to the point is desirable, as it may, by comparison with customs that may be found in other races, enable us some day to trace out the origin of the tribe. The thing is this; they hold the cow in abhorrence; they look on it in much the same way that the ordinary Muhammadan regards a pig. They will not drink cow's milk, nor do they eat or make butter from it. Nor even will they burn cowdung, the fuel that is so commonly used in the East. Some cattle they are obliged to keep for ploughing, but they have as little as possible to do with them; when the cow calves they will put the calf to the udder by pushing it with a forked stick, and will not touch it with their hands.

A greater, more astonishing, contrast between their way of looking at a cow and the consideration which the Hindūs give to the animal it would be impossible to conceive.

In some places I have found other customs accompanying this. For instance, at Dashkin, 13 miles below Astor, where the people are Shīn, they will not eat fowls nor touch them; in this they approach the Hindūs. Here, too, I was told that they have an objection to cultivating tobacco and red pepper; whether these last peculiarities attach to the Shīn generally I cannot say.

I think that these restricting customs are already dying out, and that they exist mostly where there is a geographically isolated community of Shīn without the other castes.

The table at the beginning of Chapter xx. shows in what countries the Shīn caste is found and in what the Yashkun prevails. The Shīn occur, mixed with Yashkun, along the Indus Valley and in those side valleys that immediately lead up from it.

The Yashkun without any Shīn are found in more distant places, in the upper parts of the valleys of the Indus tributaries, namely in Nagar, Hunza, Ishkoman, Yāsīn, and Chitrāl.

MUHAMMADANISM AMONG THE DĀRDS.

The Dārds are now (with the exception that will be noted farther on) Muhammadan.* Formerly they had some kind of idolatry of which we know not much, nor do we know at what period they were converted to Islām. At the time the Sikhs annexed Gilgit and Astor the people of those places were in some respects but very weak Muhammadans; it so happened that the Sikh commander, Nathū Shāh by name, was a Muhammadan and a Syed; he acquired over these Dārds a great influence, and he exerted it to make "good Muhammadans" of them, to get them to attend more carefully to the forms of their religion. It is a fact that before Nathū Shāh came (say in 1842) the Astor people used to burn their dead, and not bury them as Muhammadans should. A curious remnant of the custom still remains there—when they bury they light a fire by the grave; it is true they will now tell you that they light the fire to keep off jackals; this may be in some sense true, that is to say they could hardly reconcile themselves to leaving the body in its grave undestroyed, so they lit the fire as they had been used to, and this satisfied them in giving some security as against the beasts of prey and at the same time making a link with the past.

But it is not enough to say that these Dārds are Muhammadan; they are divided into three separate Muhammadan sects —Sunī, Shīa, and Molāī.

Sunī and Shīa require no description, as the division exists in almost every part of the Muhammadan world. The Molāī sect corresponds very nearly, or it may be exactly, with that sect called Nūr Bakhsh which we found in Baltistān (see Chapter XVI.), which was a modification of the Shīa. The name must have its

* This must be taken without prejudice to the question of the relationship of the Kāfirs to the Dārds. It is true at all events of those who have as yet been definitely classed as Dārds.

origin from the Arabic *Maula*, God, they thus calling themselves "the Godly." In matters of prayer and fasting they follow the Sunī ways, but in creed (as regards the proper succession of Muhammad's successors to the Khalīfat) they are Shīas.

The Molāīs and Shīas will drink wine, the Sunīs will not. Of the different castes it would seem that the people of each may belong to any of the three religious sects; the religious differences do not depend on the caste, but are more geographical; this is illustrated by the table given in Chapter xx.

BUDDHIST DĀRDS.

I have now to record some facts as to an outlying portion of the Dārd race, which are of peculiar interest. In that narrow part of the Indus Valley which was described under the heading of "Central Ladākh" (Chapter XIII.), are some villages inhabited by Dārds who follow the Buddhist faith; who, though remnants left by a wave of immigration from the direction of Gilgit, have so far amalgamated with the Bhots that they obey the Lāmās as spiritual leaders.

Muhammadan Dārds, whose locality is denoted on the map either as outlying or outstretching portions of the main area occupied by the Dārd race, reach up close to these Buddhist Dārds, but the villages of each are distinct. The following places —villages and hamlets—are inhabited by the Buddhist Dārds: Grugurdo, Sanācha, Urdus, Darchik, Garkon, Dāh, Phindūr, Baldes, Hanū, Lower and Upper.

That they did come from the direction of Gilgit they have a tradition, and many circumstances of language and manners show that in spite of their being Buddhists in religion they are one in origin with those Dārds we have been describing. But I think they belong to an earlier immigration; probably a small number reached their present seat and settled there, separated from the main mass of their tribe-brethren, at a time before the Dārds were converted to Muhammadanism, so that the transition from their ancient faith to Buddhism was not difficult. At that time the neighbouring Baltīs also may still have been Buddhists. Later,

when the Dārds had become Muhammadan, they spread again in this direction, and the newer comers have joined on with, or become next-door neighbours to, the earlier migrants.

The Race Map shows the area of these Buddhist Dārds under the same colour as all the rest of that race, while the Faith Map shows it under the same colour as the Ladākhīs who are Buddhists. The Language Map shows a division of even this small area, for while in the greater number of villages above enumerated a truly Dārd language is spoken, in the Hanū side-valley the people have lost their original language, and speak only the Tibetan Ladākhī; in the Language Map, therefore, that valley is coloured with the rest of the country where the Tibetan tongue is spoken, while the other villages are classed as Dārd-speaking.

These Buddhist Dārds have little or no trace of Tibetan in their faces; the two races have not mixed, or not much mixed; their face is Aryan, but not a fine stamp of Aryan; their noses are small, though often slightly hooked, their chin narrow.* In stature they are taller than the average Ladākhī, but they are not such fine men as the Dārds of Drās, Astor, or Gilgit. They wear the pigtail as the Ladākhīs do, and their dress is the same as theirs, including the drooping cap figured at p. 240.

They are a dreadfully dirty people, far more so than any other tribe I have ever met with; their faces are blotched with black dirt, which they never think of removing. As a means of purifying, instead of washing, they burn twigs of pencil-cedar, and let the smoke and the scent from it come over them and inside their clothes; they do this before eating, not perhaps generally but on feast-days, and at other times when they think purification to be necessary. Their women, who are not shy of being seen, surpass even the men in dirtiness, and altogether are the most miserable of objects.

I could not hear that there was any distinction of castes among them; indeed what I heard made me think there was not. One

* Among the Muhammadan Dārds also, as in the upper part of the Hārpo Valley in Rondū, I have found this narrow-chinned, low-Aryan, form of face. It may after all be due to an admixture of breed, in this case with the Baltīs.

might infer that they are, or have been, of the Shīn caste, from the fact that all those customs concerning the cow, which we saw to be characteristic of that caste, are held by these Buddhist Dārds to an extreme degree.

It is curious to trace how in some respects they keep to the customs of the race they sprang from, and how in others they have adopted the customs of the Buddhists. There seems to be an instance of the former case in that their headmen of villages (at all events in the Hanū Valley) are elected for three years only, and even within that time are sometimes changed; this is certainly a trace of the republican system, of which something will be said in Chapter xx. On the other hand, we see them following the Buddhist Ladākhīs in the practice of polyandry, to which they are completely given; among these Buddhist Dārds a woman has sometimes as many as five husbands.

Their religion, I think, lies easy upon them; they are not so attentive to its ordinances as the Ladākhīs are; and I do not think that any of their young men are trained up to be Lāmās. Their dead they burn, and the bones of them they stow away in holes in the cliff, closing up these with stones.

SUNDRY NOTES.

Leaving now the Buddhist Dārds, we will note a few isolated facts concerning the race generally.

It has been seen from the map that the Dārds have spread, driven by want, or by oppression, or by disturbances, from their own countries across certain ridges into valleys that were occupied by other races; in these they often live side by side with those other races—as with the Kashmīrīs and the Baltīs—sometimes in villages separate, sometimes occupying part of the same village.

At Rondū the Dārds nearly equal the Baltīs; the two do not intermarry. At Bāsho also the two races are about half and half, but here they have intermarried, and the distinctiveness has been broken up. At Dorū and at Satpūr they are of those who do not drink cow's milk; these must be of the Shīn caste.

At Drās the Dārds (who here are Sunīs) form more than half the community, the others being Baltīs, who are Shīas.

Wherever the Dārds are in contact with Baltīs or with Bhots, these others call them (whether they be Muhammadan or Buddhist Dārds) *Brokpā* or *Blokpā*. The word Brok or Blok means in Tibetan a high pasture-ground, and Brokpā or Blokpā must mean a "highlander." The origin of this appellation for the Dārds I take to be this, that they first came in contact with the Baltīs by coming over the Passes and settling in the higher parts of the valleys, parts that perhaps had been left unoccupied.

There is a colony of Kashmīrī among the Dārds at Gilgit, or rather there is an infusion of Kashmīrī blood in a certain section of the Gilgit people; many generations back there must have been a settlement of Kashmīrīs, who took unto themselves Gilgitī wives. The descendants have quite lost the language and the ways of Kashmir, and to a stranger's eye they are quite Gilgitī, but the Dārds themselves distinguish, and, as to intermarrying, keep separate from them.

In one or two higher valleys of Baltistān I have noticed a difference in the people, as compared with the ordinary Baltī, which may perhaps be due to some admixture of Dārd blood, although the fact is not noticed or known by the people themselves. Thus, at Pakora in Brāldū the men were much better looking than the ordinary Baltīs; they had well-shaped features, and had a manly bearing; I noted this at a time when I knew less about the Dārds than afterwards; now, it seems to me likely that some of that race came over the difficult Passes from Nagar and made a settlement among the Baltīs. Again, in the Turmik Valley, many villagers have a high and broad forehead, and hooked nose, though they call themselves Baltī; I have little doubt that here too is Dārd blood, the immigrating Dārds having become absorbed into the community of Baltīs, but still making a mark. These two cases I have not represented on the Race Map, not thinking them distinct enough for that; the area of Turmik and of Brāldū is coloured for Baltī alone.

There is one other peculiarity belonging to a class, which may

be an ethnological variation due to a strain of the Dārd. In general the class of Rajas and the class of Wazīrs in Baltistān are not only better looking than the ordinary Baltī, but have certain differences of cast of face. The Rajas are of several different stems, more or less connected by marriage; it is not uncommon to see them with a light complexion and light eyes and a hooked nose, in all these respects differing much from their Baltī subjects. The Wazīr class intermarry among themselves, and also take girls from among the ordinary Baltīs for their wives; hence they have a larger proportion of Baltī blood than their masters.

Cunningham remarks that the earlier Rajas of Shigar had the title of Tham, which, it seems, is the word for king in the Hunza language*; now whatever may be the affinities of the Hunza language there seems no doubt that the Hunza people are Dārds. All these facts go to support the view that Dārd blood is shared by the Baltī rulers. It would seem, indeed, probable that at different times the Dārds had given rulers to the Baltīs and the Baltīs to the Dārds, for, as Cunningham states, the chiefs of Astor are called by the Tibetan title of Makpon.

* By my own information, Āmāchā is the name of the present caste of Shigar Rajas, or else the title they are called by; it is a word of the origin of which I know nothing.

CHAPTER XIX.

DĀRDISTĀN: GILGIT HISTORY.

BEFORE THE COMING OF THE SIKHS IN 1842 — THE SIKH OCCUPATION; 1842 TO 1847 — THE SUCCESSION OF THE DOGRĀS; 1847 — THE EXPULSION OF THE DOGRĀS; 1852 — RE-CONQUEST BY THE DOGRĀS; 1860 — LATER HOSTILITIES: 1863 TO 1869 — CHANGES AT YĀSĪN; 1870 TO 1873.

Before the coming of the Sikhs in 1842.*

As far back as the time of any tradition that has reached me, Gilgit has been governed by Rajas; it has not been of those valleys ruled a democracy, such as, in connection with some neighbouring countries, we shall later describe.

The early Rajas of Gilgit were called Trakane; that was the name of their caste or family; this caste is now extinct, except that the present titular Raja has a slight strain of that blood from the female side. Tradition mentions as the founder of this royal family of Trakane one Trakan, a personage described as of miraculous powers. I was told the names of half-a-dozen rulers after him whom we still must count as outside the bounds of history; these are Azar, Jamsher, Khisrau, Fardos, and Habikan his son. It is worthy of note that most of these names are old Persian ones. The succeeding names I think we may depend upon, namely:

Gūrītham.
Muhammad Khān, son of Gūrītham.
Abas, brother to Muhammad Khān.

Of the name Gūrītham the last syllable must be the same word "tham" which in the Hunza language means "king" or

* I am not sure of this date to a year; J. D. Cunningham ('History of the Sikhs') says, "Towards the end of 1843 the secluded principality of Gilgit was overrun and annexed to Cashmere by the Sikhs." But my other information pointed to the year 1842.

"raja"; the name "Gūrī" is found in composition in Gūrīkot, *kot* meaning "fort;"; there is one Gūrīkot in the Astor Valley and another in the Kishangangā Valley.

Abas was the last of the Trakane line; with him ended the independence of Gilgit; henceforward the valley was devastated by successive invasions of the neighbouring Rajas, who, each in turn, first acquired the country and then was defeated and killed by some other. In the twenty or thirty years ending with 1842 there were *five* dynastic revolutions in Gilgit, as follows :—

(1) Sulaimān Shāh, ruler of Yāsīn, of the Bakhte caste or family, conquered Gilgit from either Muhammad Khān or Abas, I do not know which.

(2) Āzād Khān, ruler of Puniāl, killed Sulaimān Shāh at Shèr and ruled in his stead in Gilgit.

(3) Tāir Shāh, ruler of Nagar, displaced and killed Āzād Khān; he himself died a natural death, and was succeeded by his son, Shāh Sakandar.

(4) Gaur Rahmān, ruler of Yāsīn, conquered Gilgit and killed Shāh Sakandar.

(5) Karīm Khān, brother to Shāh Sakandar who was killed, with the aid of a Sikh force, expelled Gaur Rahmān from Gilgit a year and a half after his acquisition of it.

This brings us to the year 1842, and from that time Gilgit history becomes bound up with Kashmir; from here onwards it is known in more detail.

But first I must speak of Gaur Rahmān, who, though expelled at this stage, will again appear on the scene in a prominent part. He was the eldest son of Mulk Imān,* the ruler of Yāsīn. He

* Dr. Leitner states that Mulk Imān was brother to Sulaimān Shāh; this would make Sulaimān Shāh uncle to Gaur Rahmān, but in another place Dr. Leitner speaks of Sulaimān Shāh as Gaur Rahmān's great-uncle; I do not know which is correct.

I have had given me the names of eight sons of this Mulk Imān :—Gaur Rahmān: Gul Sher Khān, the son of a golī, or concubine; he was killed in the fight at Madorī: Mīr-i-Imān, the son of a Rānī; he was killed in Chitral, in 1870: Akbar Imān, the son of a golī; he was killed by his nephew, Mulk Imān: Khalīl-i-Imān, the son of a golī; he lives at Tūī, in Yāsīn (1870): Dur-i-Imān; he was killed at Madorī: Suja', the son of a golī; he was living in Yāsīn in 1870: Zedulla Khān, the son of a golī; he was killed at Roshan in 1869.

was a most bloodthirsty man; as much so perhaps, though he had not the same opportunities of killing on a large scale, as Theodore of Abyssinia. There are many tales told of his ferocity and brutality; the Dārds generally are rather careless of life, but with his deeds they were disgusted. I believe it to be a fact that on one occasion at least he killed a young child by throwing it up and cutting it in the air with his sword. And I cannot doubt the truth of this that I heard, that, he stopping at Naupūra, on a village headman being brought before him on some complaint, or else coming to complain of his people, Gaur Rahmān beckoned him near, and then, with his sword, cut the man's head off with a blow; then he would let no one touch the body to bury it, but would have it devoured by the dogs. They say that when he was ill he would have some men killed for *niyāz,* that is, as a propitiatory sacrifice. He seems to have had a special enmity and spite against the people of Gilgit, who suffered terribly under his two reigns, but to have spared the Puniāl people.

Gaur Rahmān married first the maternal aunt of Imān-ul-Mulk, ruler of Chitrāl, secondly the sister of the same Imān-ul-Mulk, and, thirdly, the daughter of Āzād Khān, of Puniāl, that is, it would seem, the daughter of the man who killed his uncle. From the first marriage he had two sons, *Mulk Imān* (named after his grandfather) and *Mīr Walī;* from the second marriage he had a son, *Pahlwān Bahādur,* who is also called Ghulām Mahai-ud-dīn; from the third marriage he had two sons, one was *Mīr Ghāzī,* the other (whose name I do not know) was killed by his half-brother Mulk Imān.

THE SIKH OCCUPATION; 1842 TO 1847.

Gaur Rahmān, as stated above, coming from Yāsīn, conquered Gilgit and killed the then ruler, Raja Shāh Sakandar. Shāh Sakandar's brother, Karīm Khān, having escaped to Gor, from there sent an agent to the Sikh Governor of Kashmir imploring aid. The appeal was responded to. A couple of Sikh regiments were sent under Nathū Shāh, a Syed, of Gujrānwāla, who held the rank of colonel. This was about the year 1842. Up to this time the

Sikhs had not occupied the intermediate country of Astor, but they had made it tributary to them; now on advancing they established a post there to make their communications sure.*

Nathū Shāh encountered Gaur Rahmān (who seems to have relinquished Gilgit itself) at Basīn, three miles higher up the valley, and defeated him; Gaur Rahmān retired into Puniāl.

Shortly afterwards, in the same year, one Mathrā Dās, having boasted to the Sikh Governor of Kashmir that he could easily settle the whole country of Gilgit, was sent to supersede Nathū Shāh. Coming to Gilgit, Mathrā Dās went forward to the frontier by Sharot with part of the Sikh force, Nathū Shāh retaining the rest. Gaur Rahmān attacked Mathrā Dās and his force in the stony plain between Sharot and Gulpūr and defeated them with great loss, having here some horsemen to aid him. Mathrā Dās himself ran straight away to Kashmir; but Nathū, who was really a soldier, came up with his reserve from Gilgit and prepared to engage Gaur Rahmān. But before they came to blows negotiations were entered into, and the strange result was that it was agreed the Sikhs should hold Gilgit, the boundary being drawn where the two forces were confronting each other, that being, indeed, the usual boundary of Gilgit, and that Gaur Rahmān should give his daughter in marriage to Nathū Shāh, the commander of the Sikhs. Not only was this done, but the Hunza Raja (Ghazan Khān) and the Nagar Raja, who were there as allies to Gaur Rahmān, did the same thing; each gave a daughter to Nathū Shāh, and peace was made all round.

Of course Nathū Shāh did not give over Gilgit completely to Raja Karīm Khān, who had called in his aid, but there was a kind of joint government established. Karīm Khān had certain dues from the people allotted to him; further imposts were, I think, made for the Sikh Government; a small Sikh force was fixed at Gilgit under a thānadār, and Nathū Shāh himself returned to Kashmir, or rather (for reasons connected with the Sikh troubles which were then brewing) passed through Kashmir, avoiding Sirīnagar, to the Panjāb.

We have seen that Karīm Khān was not of the old rulers of

* For an incident in the history of Astor near this time, see p. 403.

Gilgit; his father had conquered it; his brother and he himself had been turned out by Gaur Rahmān, who had just the same right to it as the other's father—that is, no right at all, but only the power of acquiring it. Karīm Khān asked the aid of strangers —of the Sikhs—to get back the country; they got it back, but, as was to be expected, held it more for themselves than for him.

Thus were things settled; and this was the state that Maharaja Gulāb Singh succeeded to when he received Kashmir in accordance with the two treaties made by the British, with the Sikh Darbār in one case, and himself in the other.*

THE SUCCESSION OF THE DOGRĀS; 1847.

On Kashmir, and with it Gilgit, being ceded to Gulāb Singh, Nathū Shāh left the Sikhs and transferred his services to the new ruler, and went to take possession of Gilgit for him. In this there was no difficulty. The Dogrā troops relieved the Sikh posts at Astor and Gilgit; most of the Sikh soldiers took service under the new rulers; they were few in number, those at Gilgit being perhaps not more than one hundred.

The frontier at this time was between Shakaiot and Gulpūr, in the main valley, and somewhere above Chaprot, on the Hunza stream. Since then, after many oscillations, of some of which an account will be given farther on, the changes made have resulted in this, that Puniāl has been brought within the Maharaja's boundary as a dependent Rajaship, and that his territory in the valley of the Hunza River has been contracted by Chaprot having been wrested from him by the Hunza people.

It has been the subject of remark by some that the words of the treaty between the British Government and Maharaja Gulāb Singh (see Appendix V.), namely, "the hilly or mountainous country, with its dependencies, situated eastward of the river Indus and westward of the river Ravee," cannot be made to include Gilgit, which indeed is on the north of the Indus.

But the fact is these words will not bear any close geographical examination or application at all. Ladākh, which certainly was

* See Chap. I., p. 20, and Appendix V.

intended to be brought in, is north-east and north of the Rāvī, and not west of it; Kashmir itself, the chief object of the treaty, cannot accurately be said to be west of it either, while it is both east and west of the Indus. The framers did not know very exactly nor care to express very closely how the countries lay; but afterwards, at leisure, a commission was sent by the British Government, which laid down a portion of the boundary, and by that commission both Ladākh and Gilgit were recognized as part of the countries handed over to Maharaja Gulāb Singh. To Gilgit came Lieuts. Vans Agnew and Young,* of the Bengal Engineers. I do not hear how far they went up the main valley; on the Hunza River they went to the frontier, then beyond Chaprot. Also they wrote to the Hunza Raja asking his leave to come there, but he refused it. At this time (which was, I think, in the year 1847) the actual boundary, as before said, was above Chaprot in one valley, and between Shakaiot and Gulpūr in the other.

The state of peace did not long continue. Shortly after the visit of the two English officers, the Hunza Raja made an attack on the Gilgit territory and plundered five villages; he justified his thus breaking peace with Nathū Shāh by saying that Nathū Shāh had broken faith with him in bringing the Farangīs to see the country. Nathū Shāh led a force up the valley of the Hunza River to avenge this attack, but his force was destroyed and he himself was killed, as also was Karīm Khān, the titular Raja of Gilgit, who had accompanied him.†

* Lieut. Vans Agnew was murdered at Multān; Lieut. Young is now Col. (Ralph) Young, R.E., Commissioner in the Panjāb.

† Karīm Khān was succeeded in the title of Raja of Gilgit by his son, Muhammad Khān. This one, from the troubles that will be described immediately, retired to Kashmir, where he died. Thus when, as will be told, the Maharaja of Kashmir, after losing Gilgit, reconquered it, there was no one to represent the family in whose aid the Sikhs had originally arrived in the country. But the present Maharaja looked about for some one of that family, and then heard of a boy three years old, whose parentage was this—Karīm Khān had married a woman of the old Trakan caste; a daughter of this marriage had married Zafar, the present Raja of Nagar; of these a boy was born, whose name is Alīdād. The Maharaja wrote to the father saying he would like to do something for the boy; thereupon Zafar sent the child, and said the Maharaja might have him for good and all. He lives at Gilgit, with the title of Raja, and with some, not very important, rights to a share of certain dues. When I saw him he was a sharp little boy of thirteen.

Gaur Rahmān, too, who at this time governed Puniāl and Yāsīn, joined in against the Dogrās; the people of Darel joined also; Gilgit Fort fell into the hands of these allies.

To put things right Maharaja Gulāb Singh sent two columns, one from Hasora and one from Baltistān; there was some fighting, and then peace was made on the basis of the former state of things. After this a few years went by without any great disturbances, until events occurred which caused the Maharaja to lose all of Dārdistān that he possessed on the right bank of the Indus.

The Expulsion of the Dogrās; 1852.

In 1852 Sant Singh was Thānadār, or Commander, at Gilgit Fort; there was another fort at Naupūra, a couple of miles off, held by a Gurkhā regiment of the Maharaja's, under Rām Dīn, Commandant; and one Bhūp Singh was in command of the reserves at Bawanjī and Astor.

I do not know what it was that made Gaur Rahmān to perceive and urged him to take advantage of his opportunity. He suddenly brought a force that surrounded and separated the two forts.

Bhūp Singh, hearing of this, advanced to their relief with some 1200 men. He crossed the Nīla Dhār, a ridge which separates the Se and Gilgit valleys, and had reached to the bank of the Gilgit River, where there is a narrow space between the water and the alluvial cliff; the path here rises from the level of the stream to an alluvial platform two or three hundred feet above it by a narrow gully. But here he found the road stopped by the enemy; the Dārds had barricaded every possible channel of access, they had built sangars, or stone breastworks, across every gully that led to the higher ground. And the Dārds had also managed, by passing along difficult mountain paths, to get to the rear of the Dogrās, so that their retreat by the way they had come was made equally difficult with their advance. The river by their side was swift and deep, there was no hope to be gained from that; at the same time the Hunza people assembled with adverse intent on the left bank opposite, within gunshot. In short Bhūp Singh was caught in a

trap. Thus encircled he was helpless unless by main force he could push his way up one of the defiles.

The Dārds then began to play the game of double-dealing in which they are such adepts.* They promised Bhūp Singh provisions, for of these he was quite short, and a safe passage back if he would agree to retire. This he consented to do, and he waited for days in hopes of the food coming; the Dārds kept him in expectation, and fed his hopes; one might almost fancy that they had learnt a lesson from Akbar Khān of Kābul. Thus for seven days the Dogrās were kept without food, and only then, when they were so reduced in strength as to be helpless, did the enemy begin their attack. The Hunza people fired from the left bank, while Gaur Rahmān's army sent from the summits of the alluvial cliffs close above a storm of bullets and stones that soon overwhelmed the force. Near a thousand died on the spot; a hundred or two were taken prisoners and sold into slavery.†

I think that Gaur Rahmān himself was not present here, but that the Dārds were led by his brother and his sons.

While the Maharaja's reserve was thus being disposed of, a somewhat similar tragedy was being done upon his troops at Gilgit and Naupūra, who, we saw, had been separately surrounded. Naupūra is on an alluvial or fan plateau, 250 feet above the Gilgit plain. An adjutant with two or three hundred men sallied from Gilgit Fort in order to succour the garrison of Naupūra; they divided into two parties, those who went by an upper path were cut to pieces, the others succeeded in throwing themselves into the fort. But here, too, rations failed, and, besides, the supply of water was cut off by the enemy. Then began negotiations as before, and the force was allowed to retire; they were being passed down, when, as I hear, one of the Dārds made a grab at a gold earring which the Commandant wore; this he resisted, and the affray was the signal for a general assault on the Dogrā troops. These collected themselves into a walled enclosure—the

* I do not mean to say that the Dārds are much given to double-dealing; I think that the Dārd character, at all events of the lower classes, is generally straightforward. *But in war they would count such a weapon quite a fair one, and certainly they can make good use of it.*

† One of these survivors is now, they say, a rich merchant in Yārkand.

place abounds with such—and defended themselves gallantly for a whole day, but they were at last overpowered; about 300 were killed and a few were made slaves. Eighteen years later I met one of these; he was a Rājpūt, but he had been forced to become a Muhammadan for the sake of his life; he was taken into the household of one of the family of Gaur Rahmān, and grew into a position of great confidence there, and had become bound up in feeling with the Dārds.

Then came the turn of Gilgit Fort. I do not know exactly how it was managed (for where the destruction was so thorough it is not easy to get the evidence of eye-witnesses), but I believe that in somewhat the same way all the garrison came into the hands of the Dārds and were killed. The Gurkhā soldiers in the Maharaja's army, as in the British, take their families with them on service; their wives were in Gilgit Fort; these were all killed excepting one, who, throwing herself into the river that flows by the fort, managed to cross it and to reach the Indus, and to cross that also to Bawanjī; they say that she swam the Indus holding on to a cow's tail; at all events she escaped to tell the story, and she now receives a pension in Kashmir.

Thus, as before said, the Dogrās were expelled from all that part of Dārdistān which is on the right bank of the Indus. Gaur Rahmān again ruled in Gilgit.

From the time when these events happened, from the year 1852, onwards for eight years, the Maharaja's boundary, below Haramosh, remained at the Indus; above Haramosh, that is, in Baltistān, he possessed the country on both sides of the river. A considerable force was kept at Bawanjī; a few small raids took place, but no important movement; once by way of reprisal an expedition was made into Se, but none of the country on that side of the Indus was for a long time occupied. It seems to have been Gulāb Singh's fixed policy to advance no farther.

RE-CONQUEST BY THE DOGRĀS; 1860.

In 1857 the present Maharaja, Ranbīr Singh, succeeded his father, Gulāb Singh, and he soon formed in his mind the intention

of regaining on the frontier what had been lost, and re-establishing the name and reputation of his army. At first, however, his attention and his resources were employed in the operations attending the Indian Mutiny; it was not until 1860 that he found opportunity for settling the affairs of Gilgit in the way he desired.

A force crossed the Indus and advanced on Gilgit under the command of a man who was a thorough soldier, Colonel (now General) Devī Singh, Narainiā. In the interval of eight years Gaur Rahmān had built the fort described in Chapter XVII., and this was thought by the Dārds to be a work quite impregnable; but the Dogrās determined to attempt its conquest.

It so chanced that just before Devī Singh's force reached Gilgit, Gaur Rahmān himself died; it was, I think, in Yāsīn that he died; the news undoubtedly disheartened his people in Gilgit; they did not make much resistance to the assault; a cannon-ball which passed through the door of the fort killed the Wazīr; this decided them to give in, and Gilgit again belonged to Jummoo, and since then the hold of the Dogrās on the fort itself has never been lost.

Reckoning, doubtless, on a general disorganization of the Yāsīn power from Gaur Rahmān's death, the Dogrā leader determined to advance farther, to follow up the victory. He and his army were actually able to reach Yāsīn, which they took, but to hold it was no part of their plan, so after a few days they retired to Gilgit.

They had, however, placed on the gaddī, or throne, at Yāsīn one Azmat Shāh, a son of Sulaimān Shāh, the old ruler of Yāsīn and invader of Gilgit, this Azmat Shāh being, as near as I can make out, first cousin to Gaur Rahmān. The idea was that Azmat Shāh at Yāsīn would remain on peaceable and friendly terms with the Maharaja's authorities at Gilgit. But the plan would not work; no sooner had the Dogrā force turned their backs than the Yāsīnīs expelled their nominee, and poor Azmat Shāh had to flee for his life. This was all done so quickly that when the Dogrā army on their return reached Gilgit, which is but

half-a-dozen marches from Yāsīn, they found Azmat Shāh already there a refugee, he having come by a mountain path in his flight.

One other political arrangement was then made, which was more permanent—indeed has endured to this day (1874).

Mention has been made of Raja 'Isā Bāgdur, of Puniāl, of the line of the old Rajas of that country. I think it must have been about the time of the Sikh invasion of Gilgit that he incurred the enmity of Gaur Rahmān, and was obliged to leave his home; he took refuge first in Gilgit, then in Chilās, and ultimately he came to Kashmir, and there received a grant of land. When the re-conquest of Gilgit was planned, he accompanied the Maharaja's troops, and as the advance was continued into the country of his hereditary chiefship he was placed in power, and welcomed by the people, who had for some years been subject to the bloodthirsty Gaur Rahmān. Ever since that time Puniāl he has held, aided by and aiding the Maharaja's troops in all the later troubles.

At this time of his reinstatement he acquired a bit of country which had never before been in the hands of his family. This was the valley of Ishkoman, which leads up northward from nearly opposite Gākūj. It was granted to 'Isā Bāgdur by Azmat Shāh, the few-days'-ruler of Yāsīn; of old it belonged to Yāsīn. Although the grantor almost immediately lost all his power, yet the grant remained for four years (or by one account six years) in the hands of 'Isā Bāgdur; then, in further struggles, he lost it, and at this day it is with Yāsīn.

The possession of Ishkoman by the same power that should hold Puniāl and Gilgit might, perhaps, be a source of usefulness, since a road leads from the head of the valley over into Badakhshān; but of the character of this road I know little.

LATER HOSTILITIES; 1863 TO 1869.

At the conclusion of the war, which ended on the withdrawal of the Dogrā force from Yāsīn to Gilgit in the same year, 1860, the state of things was this:—One of Gaur Rahmān's sons, Mulk Imān by name, had succeeded him, and was ruler of Yāsīn, of the original family possessions, with the exception of the above-men-

tioned Ishkoman. Raja 'Isā Bāgdur held Puniāl, and with it Ishkoman, in dependence on the Maharaja. The Maharaja's own officers and troops occupied the country of Gilgit, that which of old belonged to the Rajaship of Gilgit. Nor have many changes taken place since, or rather the result of them has been to bring things nearly to the same state after the various events which we will now speak of. These may seem but petty, yet their relative importance is the greater the nearer they are in time to the present, since from them can be drawn considerations which may tell on the future politics of this frontier.

After the war, though for a time peace prevailed, there was a feeling of stifled enmity between the two sides, which was sure before long to show itself in action. Various events occurred, among them the plunder and detention of a merchant sent by the Maharaja to buy horses, on his way from Badakhshān through Yāsīn, which determined the Maharaja to send a punitive expedition to Yāsīn. Early in the year 1863 a force was led by Colonel (now General) Hoshiyāra, a bold, dashing, perhaps rash, leader, to Yāsīn. Little resistance was made at the place itself. But the Yāsīn people and forces were collected at a place called Marorikot, about a day's march higher up the valley, the women and children also having taken shelter within that fort. Thither the Dogrās followed; on their approach the Yāsīnīs came out to give battle in front. The Yāsīnīs were defeated and broken; some fled to the hills, among whom was the Raja, Mulk Imān; others fled to the fort; these the Dogrās in hot pursuit followed in before the gates could be closed, and there began first a hand-to-hand fight, and then the indiscriminate slaughter that is so apt to follow the taking a place by assault.

This complete defeat brought down the Yāsīn leaders, and made them submissive. The Dogrās, indeed, at once retired to their old boundary, but for a few years Yāsīn was in some sense tributary; that is, the chiefs sent their agents to Jummoo with presents, and they were anxious to keep on good terms with the Maharaja; and with good management this state of things might have been kept up till now.

But the want of political ability in those who were sent in command to Gilgit, as well as circumstances over which they themselves had no control, hindered a good understanding being kept up with the tribes.

I do not know on what special quarrel disturbances again began, but in the year 1866 the Gilgit authorities under the Maharaja found Hunza such a thorn in the side, that they arranged an attack on that place, the Nagar people promising aid so far as to allow a passage through their country. This, indeed, was aid of the greatest importance, for the difficulty of approaching Hunza, on account of certain defiles to be passed, is probably greater than that of taking the forts when you reach them.

The Dogrā force advanced on the Nagar side of the river, the left bank, and reached a place opposite to and within gunshot of one of the Hunza forts. But the way across to it did not seem easy, the river flows between cliffs of some height—probably alluvium or fan cliffs; and it was said that no practicable road could be found down and up them.

After a few days it seemed that the Nagar people were beginning to fall away from the alliance. The Dogrās began to be suspicious of them, and this distrust very likely brought about its own justification. At last, one evening, a report spread among the Dogrās that the Nagarīs were upon them; a panic struck them, and they retreated, or more accurately perhaps fled, though no enemy was attacking them; in this disgraceful way they returned to Gilgit.

Things did not stop here. This display of weakness on the part of the Dogrās caused all their old enemies to combine to try and expel them. A most formidable confederation of all the tribes round was made. Wazīr Rahmat, the Yāsīn Wazīr, was, they say, the soul of this combination. A year or two before he had paid his respects to the Maharaja at Jummoo, coming on the part of the Yāsīn Raja. He had now accompanied the Maharaja's force to Nagar, and for some time after its return had encamped at Gilgit, but one day, leaving his camp standing, he disappeared; he made his way to Yāsīn.

In a month or two a considerable army invaded Gilgit. The Yāsīn ruler had now looked for aid across the mountains to Chitrāl, and from there came a force of horse and foot led by Imān-ul-Mulk, the Raja of Chitrāl. These with the Yāsīnis and the Darelīs (from Darel, one of the valleys on the south-west of Gilgit) environed Gilgit Fort, while the Hunza and the Nagar people, now in conjunction, occupied the left bank of the river, opposite the fort. The Raja of Chitrāl was the man of most importance of all the leaders.

This invading force, on its way to Gilgit or soon afterwards, reduced most of the forts of Puniāl; that is to say, Gākūj, Bubar, &c., aided, they say, by treachery within them. But the fort of Sher held out. Raja 'Isā Bāgdur himself was within it with 100 of the Maharaja's sepoys; supported by them he even went so far as to expel *most of his own people*, who, they say, went and joined —outwardly, for their own safety, and not heartily—the enemy. These, under Mīr Walī, brother to the then Raja of Yāsīn, besieged Sher with vigour, but they could make little impression upon it.

The mass of the invading force were unable to pass along the usual road on account of the fire from Sher Fort, but they found a way higher up the mountains, and so approached and invested Gilgit Fort, on the fate of which hung the state of the whole valley. The besiegers expected that it soon would fall, for they had heard that it had provisions to last for a week or two only, so they closely blockaded it, and were able to repel all sallies. But, in truth, the fort was better provisioned than they thought.

Meanwhile news of this state had reached Kashmir, and the Maharaja had sent off reinforcements with great expedition under the charge of Wazīr Zurāorū and Col. Bija Singh. At Bawanjī, on the river, they met with some opposition; but when once they had effected a landing on the right bank of the Indus, and the news had reached Imān-ul-Mulk, he and his troops and allies decamped and got safely back to their own countries.

The whole confederation had melted away. Thus different was the conduct of it from the energetic action of the Yāsīn troops,

who fourteen years before succeeded in expelling their enemies from the Gilgit Valley.

The Dogrā force now assembled in Gilgit was, for that barren country, very large; there were, I think, 3000 soldiers, and they were accompanied by a great number of coolis to carry supplies. The leaders began to revolve in their minds what should be done, what punishment should be inflicted, and on whom, as a retribution for the late invasion; but it was long before they could come to a decision. Wazīr Zurāorū wished to attempt something, but something that was sure of success; an old and trusted servant of the Maharaja's house, now declining in years, he did not wish that his reputation should be dulled at last by a failure. After much time wasted in hesitation, an expedition to Dārel was determined on.

The expedition started in September (1866).* The main body, under Wazīr Zurāorū and Colonel Bīja Singh, went by the Naupūra ravine, which is almost exactly in front of Gilgit; another division, under Bakhshī Rādha Kishan, went up a side valley from Singal. The only opposition met with was to the main force. This, having crossed the dividing ridge of mountains, was passing down along a ravine, at some distance above the place where that ravine debouches into the main Dārel Valley. A barricade formed of felled trees and stones was met with; this was defended by Mulk Imān of Yāsīn, with some of his own people who were more used to fighting than were the Dārelīs. Bīja Singh, however, an experienced and wary soldier, knew what was the right thing to do; he scaled the heights and turned the position, and the enemy had to flee. In a day or two after this the right column joined. The main column had made six marches to the first village-fort in Dārel, the right column four marches. There was no more opposition, the country of Dārel lay open to the Dogrās.

As will be seen from the map, this Dārel Valley leads southward to the Indus. There are seven village-forts in it; the Dogrās only reached four of them; the one they came to first was the highest in the valley. All the inhabitants had fled to the

* It was while this expedition was on hand that Dr. Leitner visited Gilgit.

mountains, there was not even a woman or a child to be seen; the cattle even had all been driven off. The Dogrās stayed a week. Some of the chief men of Dārel came in and made their submission; as snow was about to fall on the hills behind, it was convenient to take that as a reason for retiring. So the force returned, with some losses by cold, chiefly of the accompanying Kashmīrī coolis. The Dogrās certainly had shown the Dārelīs that their country was not inaccessible, and doubtless they left their mark on it. After this, a great part of the force returned to Kashmir, and the usual garrison was established in Gilgit.

In the next year, I believe, 1867, the untiring Yāsīn enemies invaded Puniāl, attacking the fort of Bubar; but here were some of the Maharaja's irregulars, and they, with Raja 'Isā Bāgdur, held out and made sallies; so the enemy was held in check until Bakshī Rādha Kishan arrived with some troops from Gilgit and relieved the place, the Yāsīnīs at once retreating.

This was the last conflict that occurred on the side of Yāsīn.

The enmity of the Hunza ruler was no less than that of the Yāsīn Raja. He had, in some of the later wars, taken, and he succeeded in retaining, the village of Chaprot, which village is held by Hunza to this day. From Chaprot, in or about the year 1869, the Hunza people made a raid on the large village of Niomal; they took away all the inhabitants, some 200 in number; those of them who were Kashmīrī Dārds, of the mixed blood, sixty or seventy, they sold to slave-merchants; but the others, after representations made from Gilgit, they sent back.

Other things have been endured from Hunza, and some reprisals have been made by the Gilgit officers, but there has been no fighting on a large scale.

Changes at Yāsīn; 1870–1873.

The list of Gaur Rahmān's sons before given must be referred to, and the names of the three first of them remembered. There are Mulk Imān and Mīr Walī of one mother, and Pahlwān Bahādur (also called Ghulām Mahai-ud-dīn) of another, who was sister to Imān-ul-Mulk, the Raja of Chitrāl. We saw that Mulk Imān,

Gaur Rahmān's eldest son, succeeded to power on the death of his father, and had, during the later hostilities, led the Yāsīn forces; he is a man, I believe, of small stature, but strong and active, a soldier, but without much head.

Soon after the events last described, Mulk Imān and his brother Mīr Walī fell out. Mīr Walī, getting aid from Imān-ul-Mulk of Chitrāl, expelled Mulk Imān, and himself became ruler in Yāsīn. Mulk Imān took refuge in Darel first; then, strange to say, he came to the Maharaja of Kashmir, was well received by him, and was established at Gilgit with a pension, almost within sight of his old enemy Raja 'Isā Bāgdur, and quite within sight of the agents of his inimical brother, who now and then used to come to Gilgit.

Mīr Walī became a tributary to, or, more than that even, a dependent on, the Raja of Chitrāl. Pahlwān Bahādur received from the same chief the governorship or rajaship, whichever it may best be called, of Mastūj on the Chitrāl side of the mountains. Thus Chitrāl, Mastūj, and Yāsīn became bound up together. The relation of all these to the Maharaja's officers at Gilgit consisted in keeping and being kept at arm's length. As a rule, the Maharaja's agents could not safely enter the other territories, but some messengers from Yāsīn or Chitrāl used to come to Gilgit, knowing they need not fear for their lives, and hoping to carry away some present worth having in return for the smooth messages they delivered.

The next thing that brought about any change was, curiously enough, the visit of an Englishman.

In the beginning of the year 1870, Lieut. George W. Hayward came to Gilgit. He had been sent out by the Royal Geographical Society of London with the object of exploring the Pāmir Steppe. In prosecution of this object he had gone to Yārkand and Kāshgar, from which places he had, in the previous year, returned to the Panjāb unsuccessful as to his main end, not having been allowed to approach the Pāmir from the side of Yārkand, but with a store of information about Eastern Turkistān. With an enthusiasm for his purpose that was characteristic of him, he determined

to run the risk of a journey through Yāsīn and Badakhshān to the place which was his goal. Though warned by many of the danger of putting himself in the power of such people as the Yāsīn and Chitrāl rulers—I myself introduced to him men who knew the ways of them, and declared them to be utterly devoid of faith—he started on the journey. What followed is told in the Royal Geographical Society's Proceedings for 1870, partly by his own pen, and partly, the final scenes, by mine. As that publication may not be available to all my readers, and as the story of the endeavours of a brave rash man may have interest and value to them, I will here put down a short account of Mr. Hayward's doings, by the repetition in part of the substance of what I had before written to Sir Roderick Murchison, President at that time of the Royal Geographical Society.

The first thought was that there would be difficulty in entering the Yāsīn country, that the chief would refuse admission to Hayward, as the Hūnza ruler had done to Lieuts. Vans Agnew and Young twenty years before. But it did not turn out so. It chanced that an agent of Mīr Walī's had on some pretext come to Gilgit, and was there on Hayward's arrival; by his hands he sent a letter and presents, and in due time an answer came from Mīr Walī to the effect that he would be glad to see him. So Hayward went, was hospitably received, was taken about to some of the valleys for sport, and was made much of, in fact was won over by Mīr Walī. This was in the winter when the snow was on the ground; there was no prospect for three months or more of the road to Badakhshān being open. Hayward, though on good terms with the ruler, did not think it wise to wear out his welcome by staying all that time, but determined to return to the Panjāb, and make a fresh start in the early summer. And did Hayward give nothing in return for this attention from such a known avaricious man as Mīr Walī? He gave almost all he had with him that was suitable for presents, and he promised what was of more value. And this it is that shows the astuteness of the ruler. Mīr Walī interested Hayward in what he himself counted, and persuaded Hayward to consider, his rightful claims to Gilgit,

and engaged his guest to represent these to the Governor-General, in order that the Maharaja might be forced to withdraw to the Indus.

The reader of the preceding pages will at once see that Mīr Walī had no more original right to Gilgit than the Maharaja had; that his father, Gaur Rahmān, had conquered it from some one who had conquered it from some one else; and that, although some four dynasties back (about one reign goes to a dynasty here) a relation of Gaur Rahmān's possessed Gilgit, yet he also only gained it by the same means as those by which his successor wrested it from him. The Sikhs, the Maharaja's predecessors, had conquered Gilgit from Gaur Rahmān, and, after more struggles between the two powers, neither of whom had any better claim to it than the sword, it had finally remained with the Maharaja.

But little of this did Hayward know. He adopted the views of Mīr Walī, promised his aid in getting them brought before the British Government. In fact, he himself brought them before the Governor-General; nothing was done about it; nothing could have been done about it. But Mīr Walī meanwhile was sanguine. He had, I believe, put down Hayward for a British agent, and he built upon his endeavours.

Hayward returned to Yāsīn in July (1870), and at once it was clear that the former cordial terms would not prevail. Mīr Walī was vexed at his having effected nothing for him, was vexed to see the now large mass of baggage, containing untold wealth in the very things he would like to have (for they had been provided as gifts for the people *beyond Yāsīn*), going out of his grasp, was vexed at Hayward's not agreeing to the route (through Chitrāl) that he was desired to take; lastly he was enraged at an encounter of words that took place between guest and host. For one used to have his own way within his own little country all this was sure to be more than annoying. For Mīr Walī, a man who thought little of taking life, it was enough to decide him to murder his guest and take possession of the baggage.

Hayward had started from Yāsīn, and had made three short

marches on the road to Badakhshān, had reached a place called Darkūt, when he was overtaken by fifty or sixty men sent by Mīr Walī. These, however, gave no signs of enmity; their leader said he had been sent to see the camp safe across the Pass. But the next morning they took Hayward in his sleep, bound his hands, led him a mile into the pine forest, and killed him by a blow from a sword. His five servants, Kashmīrīs and Pathāns, met with the same fate.

Three months afterwards I recovered Hayward's body, sending a messenger with presents and promises from Gilgit, where I lay. We buried him in a garden not far from Gilgit Fort.

It was said that this visit of Hayward's caused the next political changes in Yāsīn. This is what happened.

Wazīr Rahmat was still in the position of chief adviser of the Yāsīn ruler; but this thing Mīr Walī had done against his advice; it became a cause of distrust between them, and led each to plot against the other. It was Wazīr Rahmat's plot that succeeded. He sent his son to Pahlwān Bahādur of Mastūj, with whom a scheme was made up, that received the sanction of Imān-ul-Mulk of Chitrāl, to displace Mīr Walī. Pahlwān Bahādur came suddenly to Yāsīn with a few hundred men; Mīr Walī would not oppose them, but fled into Badakhshān; Pahlwān Bahādur reigned in his place.

This was about August, 1870, very shortly after the murder of Hayward. Mīr Walī, repulsed from Badakhshān, came to Chitrāl and threw himself upon the mercy of Imān-ul-Mulk, who relaxed his anger and allowed him to remain at his Court.

For the last three years, from the end of 1870 onwards, the further course of events has not been exactly known, but I believe that by 1873 Mīr Walī regained his position in Yāsīn, and that things had returned to about the same state as they were before the visit of Hayward. Efforts have been made by the British Government and by the Maharaja of Kashmir, by application to Imān-ul-Mulk and otherwise, to get hold of Mīr Walī and the actual murderers, but success has attended none of them; the murder remains unavenged.

I cannot end this subject without saying something more of George Hayward. He was led to geographical exploration by the journeys he had made among the Himalayas in search of sport while he was in the army. A keen sportsman, and a hardy, energetic, and courageous traveller, he had many of the qualities that make a good explorer. But he was more fitted to do the part of an explorer of a continent like Australia than in Asia, where nearly every habitable nook is filled up, and where knowledge of human nature and skill in dealing with various races of men are at least as much wanted as ability to overcome physical obstacles. He was a man whose many friends admired him for his pluck and his warm enthusiasm in his pursuit, and liked for the agreeableness that they always met with in him. His fate, the fate of being at an early age barbarously, almost wantonly, murdered by the order of one whom he had made a friend of and tried to benefit, filled all with indignation, a feeling that has not as yet been calmed by punishment reaching the offenders.



GEORGE W. HAYWARD; KILLED AT DARKŪT IN YĀSĪN, JULY 18, 1870; BURIED AT GILGIT, OCTOBER 27, 1870.

CHAPTER XX.

DĀRDISTĀN: COUNTRIES AROUND GILGIT.

Fragments of information got from hearsay of countries that are inaccessible to one, when they can be verified by comparison, are not without value. I will therefore put down a few notes, which, as far as they go, are likely to be correct, on those parts of Dārdistān which cannot at present be reached by Europeans.

But first I will show, in a tabular form, the several divisions of Dārdistān which have in any way come within my notice, including those which have already been treated of. These divisions are in some cases separate valleys, in other cases parts of the same valley. The Table includes a statement of their form of government, of the races or castes that inhabit them, and of the sect or religion prevailing, as well as the practice that may hold as regards slavery.

DĀRDISTĀN.

	Government.	Prevailing Races or Castes.	Religion.	Condition as regards Slavery.
Gilgit ..	Governed directly by the Maharaja's officers.	A few Ronū; more Shīn; most Yashkun.	Half Sunī, half Shīa.	In these neither is there now, nor was there of old, either slavery or slave-trade.
Se	Governed directly by the Maharaja's officers.	Shīn and Yashkun	Mostly Sunī; a few Shīa.	
Haramosh	Governed directly by the Maharaja's officers.	Shīn and Yashkun	Shīa.	
Hasora ..	Governed directly by the Maharaja's officers.	Shīn and Yashkun	Sunī.	
Puniāl ..	Ruled by Raja 'Isā Bāgdur, in dependence on the Maharaja. (Raja's caste or family is called Burshe.)	Yashkun	Molāī; and a few Sunī.	
Nagar ..	Ruled by Raja Zafar. (Raja's family, Mogulute.)	Yashkun	All Shīa.	

Dārdistān—*continued.*

	Government.	Prevailing Races or Castes.	Religion.	Condition as regards Slavery.
Hunza ..	Ruled by Raja Ghazan Khān, son of Ghazanfar. (Raja's family, Ayeshia.)	Yashkun	All Molāī.	
Ishkoman, or Chatarkun	Belongs to Yāsīn	Yashkun	Molāī.	
Yāsīn ..	Ruled by Raja Mīr Walī, son of Gaur Rahmān. (Raja's family, Bakhte.)	Yashkun	Molāī and Sunī, the former predominating; no Shīa.	Here slaves are both kept and dealt in.
Chitrāl and Mastūj.	Ruled by Raja Imān-ul-Mulk. (Raja's family, Katorī.)	Yashkun	Sunī.	
Goījāl in Badakhshān	Dependent on the Mīr or Prince of Badakhshān (tributary to Kābul).	Wākhik *	Molāī.	
Dārel ..	Republic	Shīn and Yashkun	Sunī.	In these, captives of war are kept as slaves; slave-dealing is not practised.
Tangīr ..	Republic	Shīn and Yashkun		
Gor	Republic	Shīn and Yashkun	Sunī.	
Thalīcha ..	Republic.			
Chilās ..	Republic	Shīn and Yashkun		
Kolī	Republic	Shīn and Yashkun		
Pālus ..	Republic	Shīn and Yashkun		

The first five divisions I have already treated of as fully as I was able. We now come to the countries that surround Gilgit.

Nagar lies along the left bank of the Hunza-Nagar River, having Hunza opposite on the right bank. Since about 1867 it has paid a small tribute to the Maharaja, receiving in return a present of larger value; this cannot be considered more than a compliment, and a mark of desire for friendly relations.

The people of Nagar are called Khajanī.

Hunza is a more warlike country than Nagar. As shown in the last chapter, it has often been actively at enmity with the Maharaja, and it has generally been in a state of unfriendliness to him. In 1870 the Hunza Raja sent an agent to Sirīnagar to open friendly relations, who was well received; I do not know

* I have never met any of these people, but I believe them to be Dārds. Goīje is another name by which they are called; that is the territorial name, while Wākhik is the caste name.

what since has occurred, but there seemed to me to be no likelihood of close friendship.

The people of Hunza are called Hunzīje.

The people of *Ishkoman*, or *Chatarkun*, are called Ishkomanīje, or Chatarkune.

As to *Yāsīn*, the most that we know of it has been told by Mr. Hayward *; I can add little to that. The people of Yāsīn are called Pure.

Here are some notes, taken from hearsay, of the roads that lead out of Yāsīn:

Yāsīn to Mastūj; Three Roads.

(1) By Shaver, five or six marches; it can be traversed by men all the year round; for horses it is difficult in winter, but is not altogether closed for them, or if it is, then only for fifteen days or so at a time, until the snow has hardened; also it is bad for horses for a fortnight in spring.

(2) By Tūī, three marches; the Pass crossed the second day.

(3) By Nazba, three marches; the Pass crossed the second day. Both these are closed for traffic by the end of October. Probably the marches are of 20 miles each.

Yāsīn by Shaver and Tangīr to Swāt:

A five days' journey they say; but I think these are long marches: it may be 120 miles.

Yāsīn to Badakhshān.

This road is the one which Mr. Hayward was taking when he met with his death.

The Pass closes for horses at the end of October, while for two months it remains closed for all traffic. There is a glacier on the north side, but horses can go over it, avoiding the crevasses.

The people of Chitrāl are called Katare.

Dārel. This has seven fort-villages in a valley about a mile and a half wide; the cultivation, I was told, is continuous along

* Proceedings Royal Geographical Society, 1870.

the whole length of it. Vineyards abound. Kine and goats are plentiful. Deodar, pine, and oak grow on the hill-sides. Most of the people during summer time live up on the hills, where pasture is to be found. This is a federal republic; but the federal bond seems weak. The people are called by their neighbours Dārele.

Tangīr, a republic. It has of old been tributary to Yāsīn; but there is no close connection.

Gor, a republic; it has three forts or villages. It sends a few goats to the Maharaja by way of tribute, and leaves hostages in Astor, but it is practically independent. The people are called Gūrīje.

Thalīcha; a small village of seven houses. It is the smallest independent state that I have ever heard of. Its government is republican.

Chilās. This is one of the larger of these republics; its people are called by the other Dārds "Bhute." Some account of the way in which the Chilāsīs used to make raids on their neighbours has been given in Chapter XVII. The Sikhs sent an expedition to Chilās under one Sūja Singh, but it was repulsed; this was when Mīān Singh was the Sikh Governor of Kashmir, about the year 1843. The expedition sent by Maharaja Gulab Singh (in 1850 or '51), and its good effects, have already been spoken of. Since that time the Chilāsīs have been in a sense tributary; they now pay yearly to the Maharaja a tribute of 100 goats and about two ounces of gold-dust; otherwise they are free.

Beyond these, down the Indus Valley, are some places of which I know almost nothing but the name, they are—

Hudar, whose people are called Hudare.			
Bunar.			
Thak,	"	"	Khane.
Harban,	"	"	Bhije.
Thur,	"	"	Thorīje.
Sāzīn.			
Kolī,	"	"	Kolūche.
Pālus,	"	"	Palāoche.

A few miles below Kolī is Batera; beyond that Dārdistān ends and the Pathān country, where the Pashtū language prevails, begins. The Kolī people are Dārds; they know both the Dārd and Pashtū languages.

Many places have been put down as republics; what I have been able to find out about the way of their government will apply to them generally. There is a general assembly of the people, called Sigās, which decides on almost every matter. It is called together by beat of drum; men, old and young, attend it, but not women; none who have the right to attend are allowed to be absent, under pain of fine. In this assembly the rights of a minority are carefully guarded. I have been told that if even one man, supposing him to be of any consideration, object to a policy, it cannot be carried out; the assembly is adjourned for a few days, and in the interval effort is made either to convince the objector or to modify the proposal; then meeting, they may perhaps have again to adjourn; but in time something or other is sure to be arranged.

The executive consists of a few men, may be five or six, chosen by the people in their assembly. These are called *Joshtero* in the Dārd language. They are chosen for their wisdom; but here as elsewhere wealth seems to have influence to convince the people of the wisdom of those who possess it. The office of Joshtero is not hereditary; the Joshteros must be in general accord with the assembly else they will be displaced. The Joshteros deliberate together on a policy, but cannot carry it out without the consent of the assembly of the people, which they themselves call together. The Joshteros are also arbitrators to settle disputes of water and wood, and what not.

Where the valley is large, like, for instance, Dārel, each village has its own Sigās, or assembly, which settles the particular affairs of that village, while for matters of more general policy the Joshteros of all the villages first meet, and make among themselves a plan to propose, and then a general parliament is called; that is, the people themselves of all the villages together meet to hear and decide. If all of the villages cannot agree on one policy, then

each is free to pursue its own without severing the federal bond. Thus I have heard that some villages have joined with one power—have agreed to pay tribute—while others of the same valley have done the same to the rival power. But there must be some limit to this. They could not, of course, actively join on opposite sides.

My knowledge of the working of these institutions is very incomplete; on the whole I incline to think that with the republics there is less of wars of ambition than with those valleys that are governed by an hereditary ruler, less of bloodshed on a large scale, such as is brought about by or for the dispossession of dynasties. But I do not think that the internal state is so secure and quiet as under a Raja; in the republics personal independence and liberty of action are so much the rule, that no one interferes to prevent even violence

In the Table given at p. 456, the last column shows the custom of the various states with respect to slavery. There are three categories. The first includes Gilgit, Astor, Nagar, &c.; in these places not only is slavery unknown now that some of them are under the rule of the Maharaja of Kashmir, but, according to my information, it was not the custom before.

Another category includes the Republics; in these, slaves wher captured in a foray are kept as servants, as we saw was the case in Chilās with those they brought away from Astor; but they are not used as a commodity to be bought and sold.

Thirdly, in the Rajaships of Hunza, Yāsīn, and Chitrāl, slaves are openly bought and sold; the Rajas themselves are the chief dealers—that is to say, they are sellers—while merchants, generally from Badakhshān, are the buyers. The greater expense of sustaining these governments, as compared with the republics, has probably been the cause of the Rajas entering on this trade, in which they will sell, in default of others, their own subjects even. Many are the people, and of races various—Dārd and Dogrā, Panjābī and Pathān—whom the fortune of war has allowed to fall into the hands of one or other of these rulers, and who, having been bartered by their avaricious captor, are passing their lives as exiles and slaves in Badakhshān or in Turkistān.

CHAPTER XXI.

LANGUAGES.

DOGRĪ — CHIBHĀLĪ — THE PAHĀRĪ DIALECTS AND KASHMĪRĪ — DĀRD DIALECTS — THE TIBETAN — USE OF PERSIAN — WRITTEN CHARACTERS.

I GIVE below an enumeration of thirteen languages, or dialects, spoken within the Jummoo and Kashmir territories. It would be possible, no doubt, to make a greater number of subdivisions, since the speech is apt to vary in these mountain countries within very short distances; the greater number of subdivisions one makes, the less, of course, will be the difference between any two adjoining ones; in the present list, between most of those named, the differences are very marked indeed. It will be seen that for the Language Map I have massed some of the dialects into groups, for each of which groups I have used one tint. These tints may be taken as showing what languages or groups of dialects so far differ as to be mutually incomprehensible. On that principle the thirteen dialects are classed under five different languages. This classification is practical and useful, and the marked geographical boundaries of those groups enabled me to ascertain their distribution with accuracy. But, to show out the relationship of the fourteen dialects, the classification is better which is indicated by the bracketing on the left-hand side of the list, where, all the Pahārī dialects and Kashmīrī being put together, *four* great groups are constituted.

The following is the list:

ARYAN (SOUTHERN DIVISION).

DOGRĪ .. .. .. CHIBHĀLĪ	One colour on the Language Map.
RĀMBANĪ .. .. .. BHADARWĀHĪ .. .. PĀDARĪ .. .. .. DIALECT OF DODĀ .. KISHTWĀRĪ	One colour on the Language Map, under the name Pahārī.
KASHMĪRĪ	One colour on the Language Map.

ARYAN (Southern Division)—*continued.*

Dārd ..	Dialect of Dāh .. Dialect of Astor, Gurez, and Dras Dialect of Gilgit	One colour on the Language Map.

TURANIAN (Southern Division).

Tibetan	Language of Baltistān and Ladākh .. .. Language of the Chāmpās	One colour on the Language Map.

Dogrī.

Dogrī differs considerably from Hindostānī (that dialect of India which has, under British rule, become the most diffused of all), but whether or not in such a degree as would justify us in calling it a distinct language I can hardly say. If a native of Hindostān, who had never come farther north than Ambāla, were to go where pure Dogrī is spoken, into the heart, say, of the Outer Hills, he would not be able to understand any but the shortest sentences, and by no means all of these; with some difficulty he would make himself understood for simple matters.

The relationship of Panjābī to Hindostānī is very similar, while there is a difference between Dogrī and Panjābī which is not so great as that between either of them and Hindostānī. Many points of difference from this last are common to Dogrī and Panjābī; for instance, the use of the short *a* in several words which in Hindostānī would have the long *ā*, thus the Hindostānī *hāth* (hand) and *kām* (work) become in both Dogrī and Panjābī *hath* and *kam;* the not unfrequent use in these last dialects of *v* where Hindostānī would have *b*, as in *vī*, twenty (in Hindostānī *bīs*), is another instance. Of those *grammatical forms* in Dogrī that vary from Hindostānī about half are the same as Panjābī and half are different from either. In some points (as in the imperfect of the verb *to be*) Dogrī resembles Hindostānī where Panjābī differs from it.

In Appendix I. I have given a Grammar of Dogrī. The structure of that language is such that it is possible to take a Hindostānī grammar, and, without recasting it, replace the Hin-

dostānī with Dogrī forms. This indeed is very nearly what I have done in making this short grammar, taking Forbes' Hindostānī Grammar as the model.*

I am unable to compare with any exactitude the Dogrī with the other languages in respect of their vocabularies as a whole. In Appendix II. a few words are given in Dogrī and some other dialects; these are some of those recommended by Sir George Campbell (in the Journal of the Asiatic Society of Bengal), as well fitted to try the relationship of various languages.

This Dogrī is spoken by the village people of the Outer Hills and of the strip of plain at their foot, from the Rāvī to a little west of the Chīnāb.† It is spoken purest by those who have not come much into contact with other races; especially is it to be heard pure and unmixed from the mouths of the women, who, from their seclusion and little intercourse with strangers, are the most likely to preserve the indigenous speech. In the towns, but especially in Jummoo, one hears a mixture of Dogrī, Panjābī, and Hindostānī. Of the officers of the Maharaja's Court, very few, if any, speak pure Dogrī; some, indeed, hail from the Panjāb, and speak their own Panjābī with some Dogrī mixed; others have by contact with those who live in the British territory (where Hindostānī is sure to be much heard, even where it is not the vernacular) got an admixture of Hindostānī; indeed almost every one of the Court speaks a mixture of the three above-named dialects, in proportions varying for each person.

CHIBHĀLĪ.

The Chibhālī dialect differs from Dogrī by no means so much as Dogrī does from Hindostānī, but perhaps in the same degree as it does from Panjābī. One would not, indeed, on looking over the few words I have put down in Appendix II., think that there was any important difference between Dogrī and Chibhālī, but

* I have been much helped by Sonū, Brahman, who has a critical knowledge of Dogrī. The incompleteness and imperfections of the grammar are due to my not having taken as much advantage of his assistance as I should like to have done.

† Eastward of the Rāvī, the people of the Outer Hills have a speech closely allied to if not identical with our Dogrī.

these two languages *in motion* have a greater amount of difference, one that is very striking to the ear.

Chibhālī is closely allied to that form of Panjābī which is spoken west of the Jhelam, in the country called Pothwār;* this latter (which the natives call Pothwārī) I shall speak of as Western Panjābī.

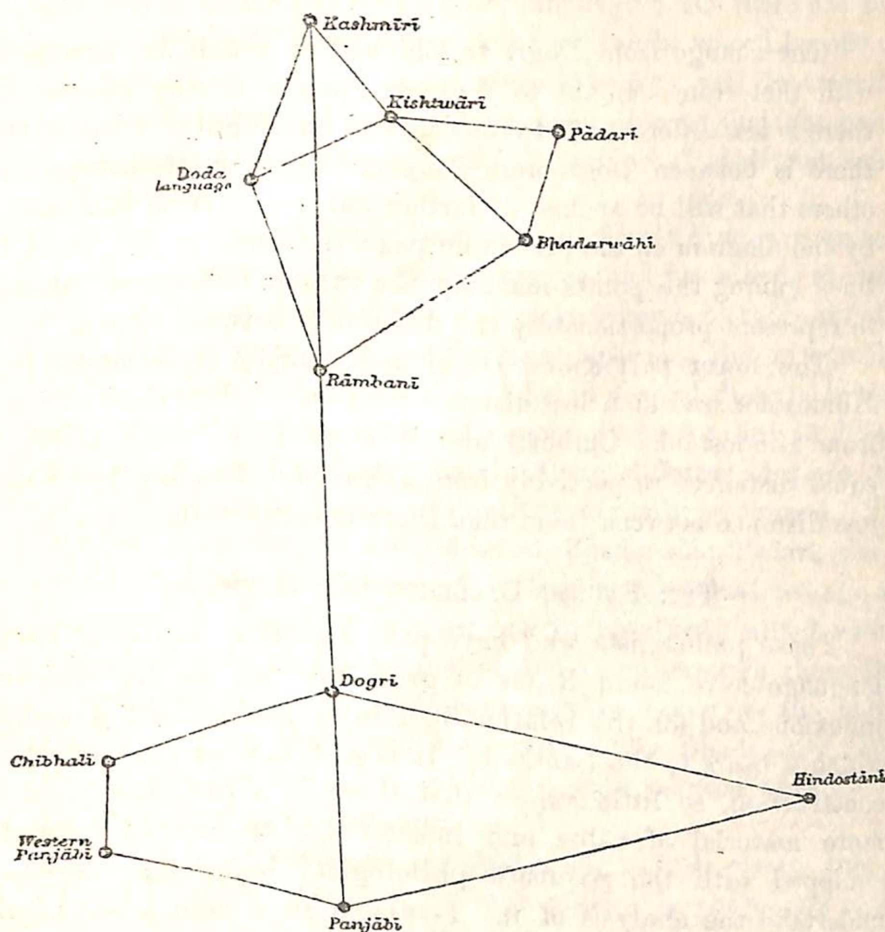


DIAGRAM ILLUSTRATING THE RELATIONSHIPS OF CERTAIN LANGUAGES.

Some of the most striking differences between Chibhālī and Western Panjābī on the one hand, and Dogrī or Panjābī on the other, consist in the use of *nā*, *ne*, and *nī* in the genitive instead of

* In this word the *t* and the *r* are both cerebral.

dā, *de*, and *dī*; and in the termination of the present participle, which seems always to be *nā*, while in Hindostānī it would be *tā* and in Dogrī and Panjābī *ndā*. Also there is a tendency for the vowel *a* (short) to become in Chibhālī *u* (short). Thus—

Dogrī:	lakrī, *wood*.	Chibhālī:	lukrī.
"	chham, *waterfall*.	"	chhum.
"	chalnā, *to go on*.	"	julnā.

The change from Dogrī to Chibhālī in the hills corresponds with that from Panjābī to Western Panjābī in the plains; but there is less difference between Chibhālī and Western Panjābī than there is between Dogrī and Panjābī. These relationships (and others that will be spoken of farther on) I have tried to illustrate by the diagram on the preceding page, in which the length of the lines joining the points marking the various dialects is intended to represent proportionately the differences between them.

The lower part shows Dogrī and Panjābī equidistant from Hindostānī, and at a less distance from each other than either is from Hindostānī. Chibhālī and Western Panjābī are shown at equal distances respectively from Dogrī and Panjābī, but with a less distance between them than there is between those two.

THE PAHĀRI DIALECTS AND KASHMĪRĪ.

Those philologists who have paid attention to the Kashmīrī language have found it one of great interest, for its elaborate inflexions and for the relation, both in vocabulary and grammar, which it bears to the Sanskrit. It is still, however, as regards its construction, so little known that there is a probable yield of more material of value and interest for anyone who should, equipped with the requisite philological knowledge, seriously undertake the analysis of it. I subjoin in a note a list of the writings on the Kashmīrī language, chiefly vocabularies, that have been published.*

* Grammar and Vocabulary of the Cashmīrī Language, by M. P. Edgeworth. Journal Asiatic Soc. Bengal, vol. x., pt. ii., 1841, p. 1038.

A Grammar of the Cashmeeree Language, by Major Leech. Journal Asiatic Soc. Bengal, vol. xiii., pt. i., 1844, p. 397.

I myself never learned to speak Kashmīrī; it is never heard in the Jummoo darbār; for the purposes of a traveller through Kashmir either Hindostānī or Panjābī will serve; since Kashmīrī is a language not easily acquired, one is not likely to master it who is not for long tied to Kashmir proper. Having allowed this, it may seem presumptuous for me to say anything about the connection of Kashmīrī with other languages; but there are some characteristics of it so marked that they can be traced by one who knows but few words of it, and since I believe that in travelling over little-frequented parts I have been able to find out certain facts of interest connected with the subject, I shall not refrain from stating them.

Kashmīrī has hitherto been spoken of as a language quite by itself, unlike any other spoken tongue, and not allied, except in the distant way in which all the Aryan tongues of India are allied to one another, with any neighbouring speech. But in travelling in the Middle Mountain region I found several dialects (which I have classed together under the name *Pahārī*) allied in different degrees to Kashmīrī, having, in these differing degrees, those characteristics by which Kashmīrī is so easily recognised. These intermediate dialects are Rāmbanī, Bhadarwāhī, Pādarī, the language of Dodā, and Kishtwārī. There is a gradual passage to be traced from Dogrī (which we saw to be closely allied with the Hindī dialects of the plains of India) up through those Pahārī dialects to Kashmīrī. Rāmbanī may be taken as the half-way stage between Dogrī and Kashmīrī; while Bhadarwāhī, Pādarī, the Dodā language, and Kishtwārī show marked advances from that stage towards Kashmīrī.

The vocabularies in Appendix II. will illustrate this to a certain extent. Some of the most noticeable characters of Kashmīrī are the possession of the sound *z* and the use of it where a

A Vocabulary of the Kashmīrī Language, by L. Bowring. Journal Asiatic Soc. Bengal, 1866, p. 227.

List of Kashmīrī Words, by Dr. W. J. Elmslie. Journal Asiatic Soc. Bengal. 1870, p. 95.

Vocabulary of the Kashmīrī Language, by Dr. Elmslie. London: Church Missionary House. 1872

Hindī dialect would have *j*, and of the sound *ts* where in Hindī there would be *ch*. These occur to some degree in all the above dialects. I am not able to any extent to compare their structures,* but something can be gathered from the way in which natives of the different parts find the other dialects to be comprehensible or incomprehensible; from observations on this I infer that Rāmbanī is about equidistant from Kashmīrī and Dogrī and is not to be understood either by a Dogrā or by a native of Kashmir who has had no experience of any other Pahārī dialect. Those dialects, as of Dodā or Kishtwār, which are between Rāmbanī and Kashmīrī, may be understood by a Kashmīrī, and possibly also by a native of Rāmban. If the reader will refer again to the diagram on p. 465 he will see an attempt to express all this graphically. There the length of the line between Dogrī and Rāmbanī equals that between Rāmbanī and Kashmīrī. The group of five dialects above are more closely allied together. Of course this diagram is but tentative; if one knew accurately the proportion of the differences between any set of languages it might, in order to represent them diagrammatically, be necessary to construct a *solid diagram*, which would, more completely than one made on the flat, illustrate the relationships in all directions; such a diagram again might be stereoscopically presented.

DĀRD DIALECTS.

In Dr. Leitner's 'Dārdistān,' before quoted, are vocabularies, phrases, and a comparative grammar that give an insight into the character of several of the Dārd dialects. I am unable to add anything to his information. All I can do is to put (as I have done in Appendix II.) those words which were used to compare the other languages into the dialects of the Dārd language which I have had an opportunity of hearing. This I have done from my own observations; on comparing the words as I took them down with the same picked out from Dr. Leitner's vocabularies, &c.,

* A few phrases in Rāmbanī and Bhadarwāhī will be found in Appendix III. The English of them is from the model phrases recommended by Sir George Campbell. See Journal Asiatic Soc. Bengal, 1866.

I find them to differ exceedingly little when allowance has been made for the different system (chiefly affecting the consonants) according to which he has written them.

The three Dārd dialects of which some words are given in the Appendix are those of Astor, Gilgit, and Dāḥ. The Astor dialect includes or coincides with the speech of Drās and of Gurez; I had made separate lists in those two valleys, but find them so nearly to agree with what is spoken in Astor that it did not seem worth while to print them.

What I have given of the Dāh dialect is new. That place, it will be remembered, is inhabited by Dārds who have become Buddhist; from their complete (and probably early) separation from other Dārd communities one would expect differences in their language. In the vocabulary given some are to be observed, but I confess that this is too meagre to be of much value, only the drawing attention to this separate dialect may be of some use.

The Tibetan.

Of the varieties of the Tibetan language spoken in these territories I have in the list named but two, that spoken by the Chāmpās, or nomads, and that of the settled Ladākhīs. There are, I believe, local differences within this latter division; the Zānskār people speak somewhat differently, and also the people in the neighbourhood of Kargil; but I am not able to give any detailed information on this subject.

The Tibetan has been so thoroughly studied that the best thing I can do here is to name some of the publications which might best, or most easily, be consulted by anyone wishing to acquire a knowledge of it. These are:

A Grammar of the Tibetan Language, in English, by Alexander Csoma de Körös. Calcutta, 1834.

Essay towards a Dictionary, Tibetan and English, by A. Csoma de Körös. Calcutta, 1834.

A Short Practical Grammar of the Tibetan Language, with special reference to the Spoken Dialects, by H. A. Jaeschke. Kyelang, 1865.

A Tibetan Dictionary, by the last author, in the Roman character, has also, I believe, been published.

Use of Persian.

With all these different languages current in the territories it can be understood that in carrying on the Government some difficulties occur through their variety. It is not easy to say whether these difficulties have been increased or lessened by the use for official documents of yet another tongue, one not spoken in any part of those territories either by the commonalty or as the Court language. The official written language is Persian.* Orders given by the Maharaja are written in Persian—character and language. In the British province of the Panjāb the Persian character is employed for writing the Hindostānī language, but here in Jummoo none of the vernaculars are written in that character, the Persian language itself is employed. Under the Maharaja the Government accounts are kept in Persian, and in almost every case that language is the medium of official communication, though it is true that the Dogrī, as will be shown below, is in some cases used.

Though Persian is so commonly written that all who would aspire to an office of any estimation must become familiar with it, yet it is very seldom spoken in Jummoo, only, indeed, when some trader or other traveller from Kābul or from Yārkand comes, unacquainted with our familiar dialects, and makes himself understood with Persian, which is the French of Asia.

This use of Persian for Government writings is to be traced back to the Court of the Delhi Emperors. There Persian had always been the polite, and it remained to the last the official, language; for long had it been the practice of those classes of men who were likely to have a hand in the civil affairs of Government early to acquire Persian, and so, on the formation of Ranjīt Singh's kingdom in the Panjāb, it naturally became the official written language of his Court, although Ranjīt Singh himself was unacquainted with it. Persian still had that position when the British came into the

* Persian is called in India by the names Fārsī and Irānī.

Panjāb, and it held its place for some little time after, until the system was changed to that in use in the North-west Provinces, where the Persian alphabet is used for the Hindostānī dialect—a plan that has evident advantages (since Hindostānī is becoming familiarly spoken by many of the Panjāb people), advantages which would be increased were the writers of Hindostānī to make use of a less elaborate idiom and less recondite words. The adoption of Persian in the Jummoo Court came about from similar causes; but I cannot say whether its use dates from an earlier period or from the time of the connection of the country with Ranjīt Singh's Court.

WRITTEN CHARACTERS.

Besides the Persian character, which in these territories is hardly ever applied to any but the Persian language, there are three written characters used for the languages here spoken. These are Dogrī, Kashmīrī, and Tibetan. They are all derived from the Devanāgarī or Shāstrī, the character in which Sanskrit is written.

In its old form the Dogrī alphabet was imperfect and not easy to read either accurately or quickly. For this reason, a few years ago, the Maharaja caused to be invented a modification of it; by this it was brought nearer to Devanāgarī, so near that the system is quite one with that, though the forms are somewhat different. It may be questioned whether it would not have been better to adopt the Devanāgarī alphabet itself, which is known to certain classes all over India; the difference already made is so great as to keep those who have learnt but one of the two Dogrī alphabets from being able to read in the other. However, the subject of what is the best alphabet to make general is a wide one, and must be considered in connection with the question of what dialect is to prevail and what languages are to be generally taught.* The

* With a mixed population of Hindūs and Muhammadans, such as occurs in the Maharaja's country no less than in the British, it is difficult to pitch upon an alphabet likely to be willingly adopted by people of both religions. All those alphabets which are founded on Devanāgarī are disliked by the Muhammadans as being the vehicle by which Hindū idolatry is taught. Hindūs often fear to have their sons taught

New Dogrī is used for the petitions that are read before the Maharaja; for this purpose it has replaced Persian, in which petitions were written when I first came to Jummoo; but it has not generally displaced either Persian or the Old Dogrī. The Old Dogrī character is made use of only for writing the Dogrī language; it is allowed in certain official documents, as in reports from officers of the army, who are of a class by whom Persian is hardly ever acquired; also many accounts are kept in duplicate—in Persian and Dogrī; the accountants of one class are considered a check on the others, a continuous side-by-side system of audit being thus carried out.

Chibhālī is an unwritten dialect. This is accounted for by the reason that the Chibhālīs, being Muhammadans, will not learn the use of the Dogrī character, in which their own dialect might be written, but, if they learn anything, learn Persian, both writing and language; and the Persian writing does not well fit, and has never been used, for these dialects. But since for a knowledge of the Persian alphabet and language an amount of time must be spent beyond what most of the people can afford, the Chibhālīs are far more illiterate than their Hindū neighbours the Dogrās.

None of the Pahārī dialects are written. Kashmīrī is written, but seldom only. There is, as before said, an alphabet fitted to it, founded on the Devanāgarī, but this is almost entirely disused; Kashmīrī is sometimes, but not I think often, written in the Persian character; Kashmīrīs of any education—whether they be Mussulmān or Hindū—are sure to know the Persian lan-

to know Persian, since with the alphabet and language the children are sure to acquire something of the tone of its literature, which may give them a tendency towards Muhammadanism. In my opinion, the best cure, in the present state of both British India and the Maharaja's territories, is to be found in the adoption of the Roman character for whatever languages are used. It has been proved to be very applicable to all the Hindī dialects and to the Persian and Arabic words that are found in Hindostānī. It is quicker to write than the Devanāgarī, and better to read than the Persian, and it can much more easily be put in type than either. And it is not so essentially "Christian" as to hurt the susceptibilities of people of the other faiths.

I may here draw attention to a paper on the subject of the applicability of the Roman alphabet to the languages of India which I read before the Society of Arts. It will be found in the Journal of that Society for February 19, 1875.

guage, and they seem to prefer communicating in writing by that medium.

None of the Dārd dialects are ever written.

Of the people who speak Tibetan, the Baltīs are without an alphabet by which to write their own language. For reasons exactly parallel to those explained as affecting the Chibhālīs, the introduction of Muhammadanism has made the Baltīs also more illiterate. The Champās not often learn to write. The Ladākhīs, as before told, very commonly are able to write their own language in the Tibetan character well and freely.

These alphabets are used by natives of the country; four have been enumerated, viz. Persian, Dogrī, Kashmīrī, and Tibetan. People who come to Jummoo from other parts not uncommonly have some other character which they write, specially applicable probably to the vernacular of their native place. Thus Sikhs from the Panjāb have their Gurmukhī writing, Hindūs from the centre of Hindostan will write either in Devanāgarī or in some allied form of character, Bangālīs will have their own Bangālī writing, and so on. I have known, besides the four first mentioned, as many as seven other alphabets in use by people who have settled at Jummoo.

CHAPTER XXII.

IN EXPLANATION OF THE MAPS AND SECTIONS.

MAP OF INDIA — GENERAL MAP — THE FIVE MAPS — ALTITUDES — SNOW MAP — RACE MAP — LANGUAGE MAP — FAITH MAP — POLITICAL MAP — SURROUNDING STATES — THE BOUNDARY LINE — INTERIOR DIVISIONS — ROUTES — ISOMETRIC VIEWS AND SECTIONS.

MAP OF INDIA.

THIS is inserted in order to give the reader, at a glance, a right impression of the relationship, in size and position, of the countries here dealt with to those with which he is likely to be more or less familiar. The adjoining sketch map of England, drawn to the same scale, will show the proportion which the Indian Peninsula bears to them, while the rectangle drawn shows what area is represented in the maps which follow. This rectangle includes the whole of the Jummoo and Kashmir territories, with small portions of the adjoining countries.

The scale of this map is $\frac{1}{19008000}$, or an inch to 300 miles. The colouring on it shows first, by the red tint, the part that goes by the name "British India," that is to say, what is directly administered by the Government of India; secondly, by the green, the Native States other than the one we are dealing with; third, by the yellow tint, the Jummoo and Kashmir territories themselves.

GENERAL MAP.

This map (which will be found in the pocket) is on a scale of $\frac{1}{1013760}$, or an inch to 16 miles. The selected names make it a complete map of reference for the text; but another object of it is to give, by means of a careful arrangement of outline and hill-shading, a good and true impression of the physical features. While carefully and without exaggeration representing the in-

equalities of the ground, we have done our best to make it a picture of the country.

The authority for by far the greater portion are the published maps of the Great Trigonometrical Survey of India. These are on a scale of an inch to four miles, with the exception that the Survey Map of part of Ladākh, not being yet ready, has been anticipated by a rougher map (a photozincograph) on the scale of an inch to eight miles; this last map (as has been mentioned in Chapter xv.) takes in a portion of country which had not been systematically surveyed; for some of this, as well as for the ground which is beyond the scope of the G. T. Survey Map, we have also consulted Mr. Hayward's Turkistān map published in the Journal of the Royal Geographical Society,* in which the valuable results of his journey to Yārkand are expressed. To the same traveller we are indebted for our knowledge of the geography of the Gilgit Valley; the information contained in his map of that country, published also by the Royal Geographical Society,† has here been incorporated. For the ground at the north-eastern part of our map, Mr. W. H. Johnson, who explored it on his way to Khutan, is the authority; the Survey zincograph map above mentioned gives the results of his exploration.

In looking at the maps of the Great Trigonometrical Survey one is apt to consider them as in some way produced by a great machine, and to pass over the individual energies that have been expended in their construction. The organization, both scientific and practical, of such a department as the Survey of India has exercised the best faculties of many minds, many minds of a high stamp, and its productions are a lasting monument to those whose lives were passed in the work. For the carrying on of the Trigonometrical observations and the mapping of the topographical details in a country of which so many parts are difficult or impossible of access, one whose most difficult places are often those most desirable to attain to for the work in hand, there has been room for the display of, and there has been displayed, by the officers of the Survey an admirable degree of perseverance and

* Journal Royal Geogr. Soc., vol. xl., 1870. † Ibid., vol. xli., 1871.

endurance, and, most difficult of all, of care exercised under the endurance of the hardships of climate. The result has been a map whose foundation, of triangulation, possesses an exceeding degree of accuracy, and whose topographical detail, though in some few cases not quite exact, makes it a map of extreme value and usefulness.

To return to our own map. The eye will at once perceive that certain portions of it have been drawn in from less detailed information than the rest; these parts (which are, indeed, sufficiently marked by the difference in the style of the hill-shading) are the Chinese territory to the south-east, and a broad strip along the north of the map. It is this which was beyond the reach of the Survey for topographical examination, though even there trigonometrical observations have reached and have fixed the places of many peaks. The authorities for these outlying portions have been mentioned above, and it must be remembered that the map has there a much lower degree of accuracy, since the result of a quick journey of exploration is a very different thing from that of the systematic and long-continued work of the Survey department.

For the line denoting the boundary of the Maharaja of Kashmir's dominions I have incorporated with what has already been published some information of my own on the subject. Since this can best be discussed in conjunction with the question of the political relations of the neighbouring states, I will defer speaking in detail about it until after the consideration of the Political Map, when, under the heading "Boundary Line," the present map will again be referred to.

THE FIVE MAPS.

A series of five maps on one scale I have designed to illustrate different branches of the geography of the territories. Their scale is $\frac{1}{2027520}$, or an inch to 32 miles; this is half the scale of the General Map. A feature which is common to all is the marking of the heights above the sea *in thousands*; that is to say, each whole number represents the number of thousands of feet that the place marked by it stands above the sea level. Thus 12 denotes

12,000 feet, and 9·1 denotes 9100 feet above the sea. For summit heights, including Passes, a dot is placed to represent the exact spot, but for valley-heights the number alone stands. Beneath the title of each map is an explanation of the way in which the three classes of heights—valleys, summits, and Passes—are expressed. A character common to the first four of these maps is that the colouring extends only to the boundary of the Maharaja of Kashmir's dominions, the blankness of the space beyond does not imply the absence of the characteristics denoted by the tints, but only that the representation of them has not been attempted. In the fifth map of this series, however, the Political Map, the colouring, the meaning of which will be fully explained below, extends to the neighbouring countries.

Altitudes.

We may examine the figures that have just been mentioned, as denoting the altitudes, on any of the five maps, but perhaps it can most conveniently be done on the first of them, the Snow Map. They afford an epitome of the information as to the form of the ground which has been given in detail in many of the preceding chapters. It may be well, by way of summary, to go over the facts so represented, even though it may involve some repetition.

The valley-heights given are, for the most part, along the courses of the great rivers. We can take in succession the Rāvī, Chīnāb, Jhelam, Indus, and Shāyok, and, following them up into the mountainous country, trace the gradual rise of their beds. For the first three the level of 1000 feet occurs at points which are in one line, and this almost corresponds with the line of the beginning of the hills. Thus these three rivers—Rāvī, Chīnāb, and Jhelam—debouch into the plain of the Panjāb, and reach the less confined and more spreading part of their course, at nearly the same level. From the sea, upwards, to this level of 1000 feet, the rivers are navigable; above, the current is too powerful, and the course is too much broken by rapids, for navigation to be practicable. The 2000 feet level of the Rāvī is about where the Outer Hills end and the region of the

Middle Mountains begins; the place is 24 miles in a straight line above the 1000 level, but more than that along the course that the main stream of the river takes. Above this the Rāvī flows in the Chamba country, where I have not followed it.

The course of the Chīnāb is through the country described in Chapter VI. Following this river up from the 1000 feet level, we have to pass over a far greater distance than in the case of the Rāvī before coming to the level of 2000 feet. Then successive thousands are reached in gradually diminishing distances; especially from 4000 to 6000 the rise is more sudden. Above 6000 I have not followed the main stream of the Chīnāb; the figures I have laid down along the Bhutnā tributary show, however, how quickly that valley rises to 11,000 feet; above this height we come on to glaciers, on which, within a very few miles 15,000 is reached, while 17,300 is the height of the Pass, which is a narrow gap in the thin rocky ridge that divides the Chīnāb drainage from that of the Indus.

Taking now the Jhelam River, we see that a great space has to be traversed between the 1000 and 2000 feet levels; but 3000, 4000, and 5000 are more quickly attained; along this latter part of the course numerous rapids occur, the surmounting of which soon brings one to a high level. Just above the level of 5000 feet we reach the high and wide and flat valley of Kashmir, where the river again becomes navigable, and so it continues as one follows it to the south-east, for some 60 miles (as measured nearly direct, without the windings), up to the level of 5500 feet, and there the streams divide and the volume of water in each is not enough to sustain navigation. The branch of the Jhelam called the Sind joins it in the flat part of the valley of Kashmir, but as one traces that branch upwards one sees, by the figures 6, 7, and 8 closely following one another, that we are again among the mountains, that the bed is rising quickly as we advance. Nearly at the head of this stream occurs the Pass, height 11,300 feet, the lowest gap through this ridge of the Himalayas.

Of the Indus, the lower portion that our map takes in is one unexplored by Europeans, and nearly unknown. Our definite

information begins where it is already at the level of 4000 feet. It is characteristic of this river that the steepness of its fall varies, now becoming greater, now less; that as one ascends one gets to where the slope is more sudden and again flatter, and so on. The varying distances at which are placed the figures denoting each thousand feet illustrate this clearly. Some of the longer distances, as between 7 and 8 and between 10 and 11, include spaces of several miles in which the river flows through an alluvial flat with a comparatively low slope, the intermediate parts being mostly in a narrow channel between rocks. At the highest portion of this river's course, as far as it lies within the Maharaja's boundary, at a level of 13,800 feet, is a long flat of alluvium, through which the river flows sluggishly.*

Of the branches of the Indus, there is first the Gilgit River, flowing from the north-west; along this there are a few observations noted, some made by myself, the higher ones by Mr. Hayward, which tell of its course up to 9500 feet. The fall of the Shāyok River corresponds for some distance with that of the Indus; it afterwards divides, within a short distance, into three branches, that which flows from the north, and bears the name of Shāyok, along which I have no height recorded; the Chāngchenmo stream, on which the level of 15,000 feet is marked, where it flows quietly over a pebbly bed; and, lastly, the Tānktse stream, the valley of which leads up to the long stretch of the Pāngkong Lake, at the level of 14,000 feet. Along other tributaries of the Indus — the Zānskār River, and others — certain heights are marked, but the series of figures is not complete. The figure 15, in two places, denotes the altitude of the high-level flat valleys of Rupshu, which lie between the upper branches of the Zānskār River and the Indus.

So much for the valley-heights; we now come to the summits. The figures that mark the height of the peaks are obtained almost entirely from the G. T. Survey, and, being de-

* I am inclined to connect this character of inequality of slope in the Indus bed with the changes that occurred in the glacial period from the damming of the river by great glaciers and the formation of great thicknesses of lacustrine deposit.

rived from Trigonometrical observations, have the highest degree of accuracy. For the heights of Passes I have relied on my own Boiling Point observations where they have been taken under favourable circumstances, always reckoning from the nearest trigonometrically-determined datum; where I have not made such observations, the maps of the Survey and of other authorities, as Johnson and Hayward, have been followed, whose altitudes for Passes were obtained in the same way.

The outermost hills are ranges between 2000 and 3000, or 3000 and 4000 feet high, with parallel valleys between them. This outer hill region is ended, in some parts distinctly, in others more indefinitely, by the branched mass of higher hills which I have called the "Middle Mountains." The figures varying from 6 to 10, or sometimes 12, are placed at summit-points on the ranges of these last; these mountains are indented by innumerable ramifying valleys, and are cut through by the deeper ones of the great rivers. Behind these mountains, rise up, still in continuation of or connection with them, the lofty ranges whose course has been pointed out in detail. Those encircling Kashmir have, it will be seen, many summits that reach 15,000 feet. Of the Passes into that country there are several at an elevation between 11,000 and 12,000 feet, but the valley of the Jhelam gains an approach into it at 5000. The watershed between the Chināb and Jhelam on the north-west and the Indus on the north-east is in a great mass of mountains, in whose summit-altitudes there are large variations. Beginning in the south-east, 20,000 and 21,000 is not an uncommon height; more to the north-west 16,000 and 15,000 is the height of the ridge; last of all, however, rises the great mass of Nangā Parbat, reaching nearly to 27,000 feet. The Passes across this watershed are first, on the south-east, above 17,000 feet, then comes one at 14,300, and then the lowest at 11,300, while farther on, where the ridge itself is least elevated, there are none less than 13,000. From the line of this watershed on to the Indus River itself a large area is occupied by mountain masses branching in such complicated fashion that one cannot attempt

to describe their direction in words, only the General Map will give to the mind an idea of them. The heights of the peaks may be said to be, in the south-eastern part, a little more or less than 20,000 feet; in the north-western part from 17,000 to 19,000; the levels of the valleys that cut in among them have already been recited, while numbers showing the height of certain cross Passes give the minimum height of the branching ridges. Then between the Indus and Shayok valleys comes the Leh Range, whose summit-ridge is from 18,000 to 20,000 feet, with Passes through it at about 17,000 feet. Beyond the line of the Shāyok is the lofty ground which separates the drainage to the Indian Ocean from that which flows to the plains of Turkistān. On the east are the plateaus at 16,000 and 17,000, backed by the Kuenlun Mountains on the north, and by a less important range on the south. These plateaus, being isolated areas of drainage, constitute the watershed at this part. West of them the two systems of drainage have a simple line of separation. The space between the Shāyok and the watershed is occupied by very lofty mountain ranges, where peaks of 24,000 and 25,000 feet are not uncommon; the occurrence of these great altitudes for such a length and width as they are found in makes this tract one of the most considerable mountain-masses in the world.

SNOW MAP.

In this map the area of country within the Maharaja's boundary is tinted in four different ways. One colour shows where no snow falls in ordinary years; another shows the parts over which snow falls and stays less than three months; a third colour shows where it stays more than three months, but does not produce glaciers; the fourth is the glacier-area.

I must be careful to explain what I mean by "glacier-area." It is the area from which the drainage of snow or of rain reaches to glaciers. I should like, instead of this, to have mapped out the area of perpetual snow, but I found I had not the data for it. The glacier-area, as above defined, is far wider than that of per-

petual snow, but at the same time we may know that (with very few, if any, exceptions) where glacier-area is marked there is perpetual snow within it, that the glacier-area is an extension of the area of perpetual snow.

The lines that bound the different areas must not be too much reckoned on as exact. The snow-fall is apt to vary in different years; I have endeavoured to represent a mean; the information was derived partly from my own observation, but chiefly from what was told me by the people; since the duration of snow much affects their occupations it is closely observed by them; this refers to the inhabited parts, which are mostly the valleys; where a line runs along the side of a mountain it cannot be taken as closely accurate, for a varying aspect towards the sun will cause differences which it would be almost impossible either to ascertain or to represent on a map. So the lines are only true as representing *in a general way* what they are designed for. The uppermost line, that which limits the glacier-area, is obtained from the larger map by marking off those parts from which snow falling and slipping, or rain falling and flowing, reaches to glaciers below.

The plain of the Panjāb is free from snow,* and so are the first ranges of the hills; but when we reach those which are nearly 4000 feet in height we find that snow falls upon them in the coldest part of the year, in January. Thus nearly all the Outer Hill region is left free, though some of the higher points of it catch the snow in ordinary years, and lower ones occasionally. It is on the outermost slope of the Middle Mountains that regularly every year a fall of snow occurs, and as the top of this slope is from 6000 to 8000 feet high, while the snow falls down to as low as 4000 feet or lower, a great vertical height of snow is to be seen on it after a winter's storm; but with the first sun the level of the lower edge rises, and the snow only stays in the higher parts where it fell thicker.

Thus the line that ends the area of no snow roughly coincides with the boundary, as far as a boundary can be defined, of the

* Since this was written news has reached us of snow having fallen at Lāhor and Jālandhar (winter of 1873–4). This I believe to have been perfectly unprecedented.

Middle Mountain region. But it will be seen that the general run of that line is indented in two or three places, especially along the line of the Chīnāb; this denotes that the deep valley of that river, cutting through the mountains, reaches down below the level at which snow usually falls. The Jhelam Valley again (of which only one side is shown in the colouring) carries the no-snow area far among the hills. On the Indus, only the very lowest spot of the portion of its valley which comes within our ken is free from snow. Since this place is 4000 feet in altitude, and is more than two degrees higher in latitude than the parts we first touched on, the cause of the absence of snow can only be the greater dryness of the air, the smaller amount of precipitation.

The line that divides the less-than-three-months area from that where snow stays for three months or more is for the most part drawn along the face of mountains at a height of at least 10,000 feet. Something like that height is wanted for such an amount of snow to fall as will last for three months on the slopes exposed to the sun; but in the valleys (which are often deeply sheltered from the rays of the winter sun) a much lower altitude suffices. Thus in Pādar, in the Chīnāb Valley, at a level of a little over 6000 feet, snow stays for four or five months. The great inlet of the above line along the upper course of the Jhelam River denotes that the Vale of Kashmir is covered with snow during a less time than three months; the head of the valley, however, and the higher parts of the karewas, come on the other side of that limit. In the valley of the Indus, Skardū has snow for about two months, as I learn from Dr. Thompson's 'Western Himalaya.' In the Gilgit Valley I ascertained that its duration was less than three months until Gākūj was reached, where it lasts for the whole of that time.

We next see that beyond the boundary lines pointed out there is an enormous area of country where snow stays for more than three months. In many parts of this five months is not an uncommon time for snow to cover the fields; in the upper villages of the Bhutnā Valley six months is the duration; and at the village of Karim, near the head of the Hasora Valley, it lasts on

the fields for seven months; this is the longest on any cultivated ground.

The whole of Ladākh has been put in as under snow for more than three months; for certain portions of that country this is only true in the sense that snow falls and does not melt within three months; it happens that in parts of Rupshu snow falls so lightly, the covering of it is so thin, that before long, partly by evaporation and partly by the drifting of it by the wind, the valleys, even at the level of more than 13,000 feet, become free. This it is which enables the Rupshu nomads, the Chāmpās, to keep their herds and flocks through the winter without a store of fodder; their winter encampment is on the flat alluvium of the Indus, at a level of 13,800 feet, in a position where, though the cold is intense, snow does not fall thick, and it disappears by the twofold action of the air. In Nubrā also the snow is apt thus to disappear, and in the lowlands of that valley some pasturage can be got in the winter time. Still all these places I include in the area of more than three months, since melting of the snow does not take place.

It is characteristic of the snow in Ladākh generally that it is *fine-grained* and *dry*; the first quality must be due to the small absolute amount of moisture in the air at the time of precipitation, the second to the intensity of cold.

We now come to trace the highest of our lines, that which marks out the glacier-area, and at the same time we will consider the distribution of Perpetual Snow.

It has been explained in Chapter IX., that the Panjāl Mountains, though rising above 15,000 feet, are free from snow that permanently lasts, and no glacier now occurs among them; only signs occur that tell of the former existence of glaciers. The first line of mountains where glaciers occur is the Watershed Range. In the south-east part of this the great width marked with the tint of our glacier-area shows that here the glaciers are many and large. Going north-westwards we see that the width lessens; then isolated spaces only occur, which tell of small scattered glaciers lying in the hollows of the highest of the mountains; then comes

a long space without any glaciers at all, which is where the height of the ridge has fallen to 15,000 feet; but at last, in the great mass of Nangā Parbat, is a wide and lofty area of glacier-making snow. Between this watershed and the range that makes the Turkistān watershed, is a wide space where glaciers occur but here and there by the highest peaks, and not over any great area. But on reaching the last-mentioned range we come to the widest part of the glacier-area. Here the mountains are of the most lofty, and the glaciers they give rise to the largest, in the world. Some account of one or two of them has been given in Chapter XVI., under the headings *Bāsha* and *Brāldū*. In the eastern part of this watershed, where the ground is more in plateaus, glaciers cease, and a way can be found from one drainage-basin to another without traversing glaciers or snow.

As to the height of the snow-line—the height at which the supply and the waste of snow balance one another—it has long been known that on the Himalayas it varies much.

Many years ago Lieut. R. (now General) Strachey,* established the facts that for the portion of those mountains between the Sutlej and the north-west frontier of Nepal the snow-limit was at these different levels for the three following positions:

On the south of the snow-belt	15,500 feet.
" north " "	18,500 "
" southern face of Kailas (which is farther within Tibet)	19,500 "

He showed also that this was due to the less amount of snow that fell on the inner side of the range, as compared with the outer.

In these westernmost Himalayas which we are dealing with, we find quite corresponding differences in the snow-limit, though on the whole, in spite of a higher latitude by from 2° to 5°, the level of it is still higher. In estimating the level of the snow-limit it is necessary, as pointed out by General Strachey in the paper just referred to, to strike an average of the inequalities of the line,

* See Journal Asiatic Soc. of Bengal, vol. xviii.

which are caused by such accidents as the steepness of slope of the mountain and its aspect to the sun. In order to fix the limit for the largest possible area, I have, in addition to my own observations as to the occurrence of snow (which indeed are not numerous enough for the object in view, as they are only good for this purpose when made in the autumn—after the summer melting and before the fresh falls), drawn upon the G. T. Survey Map for information, going on this assumption, that where a glacier exists some of the mountain which gives rise to it must have perpetual snow.*

Let us now, for the purpose of following this subject over the large area before us, divide it into Zones, and consider each in succession.

1st Zone: the country outside, that is to the south-west of, the watershed of the Chīnāb and Jhelam on one hand and the Indus on the other.

2nd Zone: the mountains of that same watershed.

3rd Zone: between that watershed and the line of the Shāyok with its continuation along the Indus.

4th Zone: between the Shāyok-Indus line and the high land which makes the Turkistān watershed.

In the centre of the 1st Zone we have the Panjāl Range without perpetual snow, and this has several points between 15,000 to 15,500. To the north-west, on the ridge that separates Kashmir from Khāghān, it seems that there are heights a little over 16,000 without glaciers, while 17,000 produces them. Thus it would seem that for the 1st Zone 16,500 feet may be taken as the snow-limit, and this is supported by the facts of the range on the south-east, dividing Chamba from Pādar.

For the 2nd Zone, after the great mass of Nangā Parbat, we have a long gap without glaciers, where the watershed is made by

* Even if this assumption is not exactly correct we shall not be far wrong in following it. It is true one sometimes sees little glaciers in the bottom of amphitheatres of mountains which do not bear snow on their summits, but then one is almost sure to find snow-taluses at the foot of the cliffs, which must be continually reinforced, and perhaps never entirely melt; these cannot, therefore, be far from the limit.

a ridge that averages less than 15,000 feet. As we come south-eastward the peaks on the Watershed Range rise, and when they reach the height of 17,000 feet glaciers originate from them; something under that, therefore, may be taken as the lower limit of perpetual snow, and thus we must conclude that there is, if any, little difference between the height of this in the 1st and in the 2nd Zones.

In the 3rd Zone we see a great difference, going from north-west to south-east, within the zone itself. At first the gap of the Indus Valley, and probably the comparative lowness of the range between Nangā Parbat and Tilel, and again the Pass of Drās, have their influence in admitting moisture-bearing winds to that tract; so that between the Hasora Valley and Skārdū the snow-level is yet not more than 17,000. But beyond Suru, opposite to which the Watershed Range is lofty and can intercept the most of the moisture, we find peaks of 18,000 without any glaciers coming from them. Around Leh 18,500 on north aspects and 19,000 on southern ones is the height of the snow-line. Farther on, in the eastern parts of Rupshu and around Pāngkong, the height of it is 20,000 feet.

In the 4th Zone there is a variation corresponding pretty closely with that observed in the last. At the north-west portion the snow-line seems to be about 18,000 feet. As one goes south-eastward, especially when Nubrā and its great ridges are passed, the mountains must be at least 20,000 feet high, if not more, to retain snow continuously. And this would seem to be about the limit on the Kuenlun Mountains as well.

It follows from these last facts—of the snow-limit varying along the length of each of the last two zones—that the changes of the snow-line do not quite correspond with the different parallel ranges from which our zones were taken, that, for the part north-east of the Jhelam and Indus watershed, lines more nearly north and south would best divide the areas of different snow-line level. For although that Watershed Range is a great obstacle to the arrival of moisture-bearing, snow-precipitating clouds, and the part within is far drier, and has a far higher snow-limit than

that outside, yet, from the gaps and partial gaps before mentioned, there is a wheeling round of the moist winds and clouds, which thus to some extent find their way round the flank of the range to the inner region, so far at all events as to affect its north-western portion.

Although, from the small area they occupy, the *snow-beds* which have been described in a previous chapter (Chapter XV., *General Observations*) have not on this map found a place, yet, in connection with the other snow phenomena, it may be well here to mention them and to state that they are found at about the level of 16,000 feet.

I will now put down, for the convenience of travellers, the words representing, in some of the languages used among the mountains, the various states of snow:

	Dogrī.	Pādarī.	Kashmīrī.	Gilgitī.	Ladākhī.
snow	barf.	dang.	shīn.	hin.	khā.
ice	kakar.	dangoth.	yakh.	sor.	chārūng.
glacier ..	..	zaryūn.	handar.	kamuk.	kān *or* kāns.
avalanche ..	..	hīwān.	mānī.	hināl.	rud.
crevasse ..	..	..	..	hir.	

Glaciers and avalanches not occurring in Dugar, the words for them are wanting in Dogrī. The *d* in *dang* and the *d* and *t* in *dangoth* are cerebral; the *n* in *zaryūn*, *kān*, and *kāns* is nasal.

Race Map.

This map shows the geographical distribution of the various nations that have been described in the different chapters of the book.

One of the tints given in this Race Map, and repeated in the two succeeding maps, denotes the portion of the Maharaja's territories which is quite uninhabited, and, with little exception, uninhabitable. This includes the great spread of the Kuenlun and Lingzhīthang plains and all that width of mountain country which, continuous with it, extends to the north-west. Then there is the mass of mountain between the Shāyok and Indus rivers, the higher parts of which are quite unfrequented.

Then, on the other side of the Indus, is the broad space of lofty ground—penetrated indeed by valleys which are more or less populated, and which on the map are withdrawn from the uninhabited space—that reaches to the borders of the more favoured tract of Kashmir and its neighbouring valleys. It was a question with me whether the summits of the Panjāl Mountains and of those east of Kashmir should be marked as uninhabited; against their being so marked there was this, that the people, especially the Gujars, in summer take their flocks and herds high up on the mountains from both sides, so that there is but a small width, of the loftiest mountains between, that is left unfrequented.

The remaining portion of the country is coloured as inhabited by the various races or nations which have been enumerated in the Introductory chapter and described in succeeding ones; the list is here repeated, with a reference to the parts of the book where details about the people will be found:

ARYAN.	TURANIAN.
Dogrā (Chap. III.).	Tibetan; subdivided into—
Chibhālī (Chap. III.).	Baltī (Chap. XVI.).
Pahārī (Chap. VI.).	Ladākhī (Chap. XII.).
Kashmīrī (Chap. VIII.).	Chāmpā (Chap. XII.)
Dārd (Chap. XVIII.).	

The *Chāmpās*, the only nomads of the list, occupy the tract called Rupshu, in the south-eastern portion of the country, as far as it is habitable; their tents are pitched in the high-level valleys at elevations varying from 15,700 feet down to 13,700 feet; below this they do not come. Lower down in the same valleys the *Ladākhīs* have settled, who are agricultural. Their villages are found even at the high level of 14,000 feet, and at every altitude from that down to about 9000 feet do they live. Besides the Indus and Shāyok Valley, Ladākhīs occupy the whole of Zānskār, and they have made a small settlement at the head of the Bhutnā River on the other side of the snowy range. At the line of their contact with the Baltīs they intermingle geographically, the two at some parts inhabiting alternate villages, at some occupying different portions of one and the same village. Thus the two squares of the Ladākhī tint within the Baltī area denote outlying

communities of Ladākhīs, and such squares might be increased in number if the degree of detail of the information possessed and the scale of the map would allow it. The next race, the *Baltī*, occupy, either partly or wholly, the valleys of certain southern tributaries of the Indus and a considerable length of the Shāyok Valley and of the Indus Valley itself, down to 6000 feet above the sea. The outlying square of their colour near Leh marks the colony of Baltīs at Chashot.

The reason of my putting such patches as this in squares is to denote that they are conventional representations, to show that there are within that spot some of the race represented, and not that the area of their occupation is exactly represented by the patch of colour. This remark applies as well to the Language Map and the Faith Map.

Passing on to the Aryan Races, we find the *Dārds* occupying the north-western corner of the territories; within the boundary it is chiefly in these places that they live—the Gilgit Valley, the Astor Valley, the Dras Valley, and some spots in the Indus Valley; also they occupy the head of the Kishangangā Valley, there approaching to but a short distance from Kashmir. The *Kashmīrīs* constitute the whole population of Kashmir, the most thickly peopled part of all the territory we are dealing with. They have spread also beyond the bounds of Kashmir into some of the neighbouring valleys, and have made scattered colonies, usually flourishing, in many other parts, among races strange to them. The squares of the Kashmīrī colour denote some of these, and beyond the reach of our map, in the Panjāb itself, are they to be found. The *Pahārīs* are the next neighbours of the Kashmīrīs to the south; they live in the eastern part of the Middle Mountains. The *Chibhālīs* occupy both the Middle Mountains and the Outer Hills on the north-west and west. That name, as I have used it, includes tribes who differ somewhat among themselves, but I have not been able to divide them accurately; I think that there is a rather marked difference between the Bambās, in the northern part of the Chibhālī tract (in the valleys of the Kishangangā and the

Jhelam above Muzafarābād), and those Chibhālī tribes south of them. The *Dogrās* are in the eastern part of the Outer Hill region.

LANGUAGE MAP.

The languages spoken have been the subject of a separate chapter; here, therefore, a very few words will suffice to explain this map, which shows the distribution of them. The principle applied has been to mass dialects, and separate only such languages as are mutually incomprehensible. The number is thus reduced to five. The tint for "uninhabited country" stands as before. The *Tibetan* language here marked out is that which is spoken, with not much difference, by the three Tibetan races who were distinguished in the last map; the area of it also includes a part of what in the Race Map is coloured "Dārd"; the reason of this is that the people of some few villages of the Dārd race (those situated in the Hanū Valley) have lost their own language and adopted the Tibetan.

The area of the *Dārd* language is the same as that of the Dārd race exhibited in the Race Map, with the exception just noted, and with the other exception that the colony of Kashmīrīs in Gilgit are not here shown as separate, on account of their having adopted the Dārd tongue.

The *Kashmīrī* language has nearly the same bounds as the Kashmīrī race, for these are a people who are apt to keep up their national characteristics. The only exceptions to this which I have noted are, first, that case of the Kashmīrī colony at Gilgit, and, secondly, the colony at Akhnūr, who have adopted the language of the Dogrās they have settled amongst.

The *Pahārī* dialects, which are allied to the Kashmīrī, which are intermediate between that language and the Dogrī, occupy the same area as the Pahārī race itself.

The *Chibhālī* and *Dogrī* dialects are here put together and represented under one colour, the two being mutually comprehensible; they occupy the combined area of the Dogrī and Chibhālī race of the last map.

Thus we have mapped five tongues of undoubtedly so much difference between each other as to deserve the name of separate languages, not merely of dialects. Of each, with the exception of Kashmīrī, there are dialectic subdivisions, but these I have not attempted to map; I have here represented the great and striking divisions only.

FAITH MAP.

There are four religions, the geographical distribution of whose followers is represented on this map. Only three, indeed, are of much importance as regards this country. These are the three wide-spread religions of Buddhism, Hindūism, and Muhammadanism. The fourth is the Sikh sect of the Hindūs, which is very sparingly represented.

The Buddhists comprise two out of the three Tibetan races who were represented on the Race Map—the Chāmpās and the Ladākhīs. They comprise also the inhabitants of several Dārd villages, who, while retaining certain rites of their own, have adopted Buddhism. It should be noted that not only those Dārd villages follow this religion who, it was shown, have acquired the Tibetan tongue and lost their own, but several others also who retain their own Dārd speech.

The Muhammadans include the Baltīs, who, as before said, are but Ladākhīs converted to Islām; nearly all the Dārds; the Kashmīrīs (taking them generally); and the Chibhālīs.

Of the Hindū faith are the Pahārīs and Dogrās.

Of Sikhs but very few are to be met with in these territories. There are some villages of comparatively old colonisation in the Jhelam Valley—more probably than I have marked, but only of those have I a record; and there is a Sikh temple and *Granth* or Book on the banks of the Chīnāb.

It is the case that within the Hindū area are many Muhammadans, not only colonies from other races, but also natives of the same part who have at different times been converted; this is especially the case in the towns. I have not attempted to represent these exceptions on the map, but have remained content witl

drawing a line to separate the tract where the majority of the inhabitants are Hindūs from that where the majority are Muhammadans. On the other hand, in every town in the Muhammadan country, Hindūs are settled, chiefly as traders; and again, in Kashmir, a proportion of the inhabitants retain their old Hindū faith; these are the Kashmīrī Brahmins; but neither of these classes has one been able to distinguish on the map on account of their being geographically so mixed up with the Muhammadans. In Appendix VII. will be found some statistics of the proportions of Hindūs, Muhammadans, &c., in the different parts of the country.

Here in these territories is the spot where the three great Asiatic faiths meet. From the neighbourhood of the Brama Peaks, *and from no other spot in Asia*, one may go westward through countries entirely Muhammadan, as far as Constantinople, eastward, among none but Buddhists, to China, and southward over lands where the Hindū religion prevails, to the extremity of the Indian peninsula.

POLITICAL MAP.

The objects of this map are the showing, first, by what Governments the Maharaja of Kashmir's territories are surrounded, who are politically his neighbours; secondly, the subdivision of these territories themselves for administrative purposes; and, thirdly, the most practicable lines of routes that exist through them. These subjects will be briefly treated of under the headings, Surrounding States, Boundary Line, Interior Divisions, and Routes.

SURROUNDING STATES.

The Political Map then shows that on the south and the south-west the Maharaja's country is bounded by some of that portion of the British dominions which is under the Lieutenant-Governor of the Panjāb. This includes two tracts—Chamba and Khāghān—which are not ruled directly by the British, but are held by native rulers tributary to and quite dependent on them; the greater part, however, is British territory, pure and simple.

On the north-west is the tract called Yāghistān, or rebel-

land; this name it has acquired from the combined lawlessness and independence of the people who inhabit it. This Yāghistān I have again divided into the space ruled over by Rajas and the space where the Government is republican. The Rajas are four—those of Chitrāl, Yāsīn, Hunza, and Nagar. Of Republics I have got the position of several, as Tangīr, Dārel, Gor, Thalīcha, and Chilās, and others exist lower down the Indus. Some little information on these States has been given in Chapter xx. At the extreme corner of our map there comes in, but it nowhere touches the Maharaja's boundary, a portion of Badakhshān, a State tributary to the Amīr of Kābul.

On the north-east and north are the dominions of the ruler who till lately was called Atālīq Ghāzī, but who now bears the title of Amīr, and is called by the English "Amīr of Kāshghar"; he is the ruler of Eastern Turkistān, whose capital at this time is Kāshghar.

On the south-east we have Chinese Tibet, which is governed by the Grand Lāmā at Lhāsa, who himself is tributary to the Emperor of China.

THE BOUNDARY LINE.

Though the above divisions are expressed by the tints in the Political Map, yet the details of the boundary between each of them and the Maharaja's territory are best shown by the line drawn on the General Map, which should be referred to as well as the other for any point connected with the absolute boundary. Although I have given this with all the accuracy possible for me, yet in different parts there are many degrees of certainty about it. Hence a detailed statement on the subject becomes necessary.

Let us commence at the most southern corner, near Mādhopūr. From that point north-westward to the river Jhelam, the boundary, with the British districts of Gurdāspūr, Syālkot, Gujrāt, and Jhelam, is defined by pillars, and has been carefully mapped. From near Duliāl on the Jhelam upwards to the falling in of the Khāghān River, the Jhelam River itself is the boundary; the right and left banks respectively belong to the British and the Maha-

raja's Government. From the last-named point the boundary line, still fixed and undisputed, follows the ridge which divides the drainage of Khāghān from that of the Kishangangā.

After this I have put it down as following the ridge between the country of Chilās on the one hand and the higher part of the Kishangangā Valley and the Astor Valley on the other. But we have here reached a part for which there is no authoritative map to follow for the boundary; it is therefore necessary to state the principles on which I have proceeded.

In the first place I do not here consider any question—if there be one—of theoretical right to the countries in question. I am only depicting the state of occupation, the political state, of the countries as they are. Now as to Chilās; that country, as was told in Chapter xx., has once been occupied by the Maharaja's troops, who went there on a punitive expedition. On their retiring, an arrangement was entered into with the Chilāsī leaders for certain tribute to be paid to, and for hostages of good conduct to be held by, the Maharaja. The conditions have been kept to for more than twenty years. But I do not consider that this is enough to constitute Chilās as even a dependency of the Maharaja. His people cannot come and go freely; for messengers he is obliged to choose men who by some reason of connection or acquaintanceship are more sure to be well treated than can be reckoned on for his nearer and more trusted officials. Thus so slight is the connection that it would not fairly represent the present political status of Chilās to bring it within the boundary. My line, down to the Indus, represents exactly where the Maharaja's direct authority ends and the ground frequented by Chilāsīs begins. The same relationship exists between the Maharaja's Government and the independent village of Thalīcha, which therefore I have excluded from the territories.

With the other neighbouring Yāghistān republics there is less connection still; they are necessarily put outside the boundary. The line is a natural one, following a watershed.

With Yāsīn and Hunza I have carefully depicted the boundary as it actually was in 1870, and as now, in 1874, I believe it re-

mains. In 1870 I was on the spot myself, and found the boundary as I now put it.

From Nagar for the most part, and from the upper part of the Hunza Valley, the separation is effected by a great and almost impassable ridge of mountains.

We now come to the Yārkand territory, under the rule of the Amīr of Kāshghar. As to the boundary with this, from the Mustāgh Pass to the Kārākoram Pass, there is no doubt whatever. A great watershed range divides the two territories. But it will be observed that from the Kārākoram Pass eastward to past the meridian of 80°, the line is more finely dotted. This has been done to denote that here the boundary is not defined. There has been no authoritative demarcation of it at all; and as the country is quite uninhabited for more than a hundred miles east and west and north and south I cannot apply the principle of representing the actual state of occupation. I have by the dotted boundary only represented my own opinion of what would be defined were the powers interested to attempt to agree on a boundary. At the same time this dotted line does not go against any actual facts of occupation.

These last remarks apply also to the next section, from the Kuenlun Mountains southward to the head of the Changchenmo Valley; for that distance the boundary between the Maharaja's country and Chinese Tibet is equally doubtful.

From the Pass at the head of the Changchenmo Valley southwards the boundary line is again made strenger. Here it represents actual occupation so far that it divides pasture-lands frequented in summer by the Maharaja's subjects from those occupied by the subjects of Lhāsa. It is true that with respect to the neighbourhood of Pāngkong Lake there have been boundary disputes which now may be said to be latent. There has never been any formal agreement on the subject. I myself do not pretend to decide as to the matter of right, but here again I can vouch that the boundary marked accurately represents the present state. For this part my information dates from 1871, when I was Governor of Ladākh. This applies also to all the rest of the boundary between the Maharaja's and the Chinese territories.

Where the British district of Spitī comes on there has been a boundary dispute, which was lately decided. From the point marked "Gya St^{n} 22309" to a little farther west than the Bāra Lācha Pass my line is different from what will be found on any published map. It expresses the result of the late negotiations on that boundary dispute, in which at one time I was concerned as Boundary Commissioner for the Maharaja; and though on one particular point this had not been settled when I left the country, I have since ascertained that the line has been marked out as is here depicted.

From near the Bāra Lācha Pass westward, and round to the corner we started from, the line, I believe, accurately represents an undisputed boundary.

INTERIOR DIVISIONS.

For the representation of the administrative division of the Maharaja's country I have adopted on the Political Map three tints or shades.

One of these marks the tracts near Jummoo, or the Home Districts as they may be called. These are seven *zila's* or Districts—Jummoo, Jasrota, Rāmnagar, Udampūr, Riāsī, Mināwar, and Naushahra—whose government has been arranged on a plan like that of the Districts in the Panjāb. Over each is a civil officer (sāhib-i-zila') corresponding to the Deputy Commissioner of the British system, with an assistant (nāib-i-zila'); these are at the head-quarters; and there are three or four Tahsīldārs, each over a subdivision of the District that is called a Tahsīl.

Part of this area coloured as "Home Districts" is a tract marked *Rajaship of Pūnch*, lying north of the Naushahra District. This is governed by Raja Motī Singh, first cousin to the Maharaja; it is held by him in close dependence on, and indeed obedience to, the Maharaja, who, however, interferes but little with its internal management.

The next division is Kashmir proper, which is managed by an officer of considerable rank and powers. The separation of the government of Kashmir from that of the other divisions is almost

complete; the country is treated as a separate *sūba* or province in the same way as it was when the Emperors of Delhi ruled over it, who governed it by an officer who was called *sūbadār*, or, for short, *sūba*. This is the most important separate charge under the Maharaja. Kashmir (with the Jhelam Valley from Bāramūla to Muzafarābād) is now divided into six districts, Kāmrāj, Patan, Sirīnagar, Shapeyan, Islāmābād or Ānat Nāg, and Muzafarābād, which are administered by a staff on nearly the same plan as the Home Districts, but whose officers report to the Governor of Kashmir, and not to Jummoo direct.

The third division, separately coloured, I have marked "Outlying Governorships." It includes the country of the Indus basin, with the exception of Zānskār, which is a part of Ladākh geographically but is attached to the Udampūr District. The three Governorships (the separation of which is marked by a line, though not by colour) are Gilgit, Baltistān, and Ladākh; these correspond to the "Non-regulation Provinces" of India as they were before legislation welded them into a more nearly homogeneous mass with the others; that is to say, special rules are issued for each according to its circumstances, and on account of the distance from and difficulty of communication with the Court more latitude is allowed to and more independent power is exercised by the Governors.

ROUTES.

The most frequented routes through the country are also expressed on the Political Map, where the numbers accord with those put in the list of routes in Appendix IV. The roads are described so systematically and in such detail in the Appendix that it is unnecessary to say anything about them here, except a few words as to the order in which they are put.

The first eight are routes from the lower parts to Sirīnagar. Then there are five roads which lead out from Sirīnagar respectively to Gilgit (No. 9), Skārdū (Nos. 10 and 11), Leh (No. 12), and Kishtwār (No. 13). Nos. 14 to 17 are other roads that from various parts unite at Kishtwār. Nos. 18 and 19 are two routes

from Kishtwār to Leh; No. 20 is the route from Pālampūr in the Kāngrā Valley to Leh; and No. 21 the route from Simla by Spiti to Leh. No. 22 is a road that unites Leh and Skārdū. Then come five routes (Nos. 23–27) from Leh onwards to Yārkand. No. 26 is from Leh to Gar. No. 29 is the new trade-route, as originally planned, from Pālampūr by Chāngchenmo to Yārkand, avoiding Leh. No. 30 is a possible alternative, from Pālampūr by Kārakoram to Yārkand, avoiding Leh.

Isometric Views and Sections.

The object of these is to convey to the reader an idea of the vertical geography of the country. I here attempt to do so by means of three isometric views and four sections drawn transversely, at right angles to the former. These must be examined in conjunction with the General Map, the hill-shading on which will show the extension in plan of the raised masses represented in profile on the views and sections before us.

In the isometric views, I have, for the sake of showing some detail, exaggerated the vertical scale as compared with the horizontal 2½ times. In order to correct what false impression may be made on the mind by this, I have attached below each view an outline of the same mountains on a true scale, equal to the horizontal one used above, namely, the scale of an inch to 10 miles. These outlines attempt an undistorted representation of the inequalities of ground; their datum-line is drawn on a curve which exactly proportionally represents the curvature of the earth. The views are isometric projections of the mountains as seen along three different parallel lines, the direction of which is north-west and south-east. No. 1 shows the various ranges of hills that lie between the plain of the Panjāb and the Vale of Kashmir. There are first the long lines of the Outer Hills, less than 5000 feet in elevation, then the Middle Mountains that rise to 8000 and 10,000 feet or so, and, lastly, the Panjāl and the Kāj Nāg ranges which make the boundary of Kashmir to the south-west. The second isometric view, parallel as beforesaid to the last, is taken along a line drawn through the Vale of Kashmir in its length,

represented by a line on the Snow Map. The shaded part gives a section through the Vale and the Khāghān and Kishtwār valleys; the outlines show those mountains which bound Kashmir on the north-east, which lie between the valley and the Indus watershed. The third shows the country that lies to the north-east of the Indus River. The inclination of the bed of that river is shown, and beyond it, north-eastwards, some of the many ranges and branch ranges. At the right-hand end of this view I have made a shifting back of the representation, so as to get a section through the high plateau of Lingzhīthang, in order to show the relationship of that table-land to the Indus on the one hand, and to the Kuenlun Mountains on the other. The position of this last section is shown on the Snow Map.

The transverse vertical sections will, I think, explain themselves. They are plotted on a true scale (that of an inch to 10 miles), and since their datum-line is accurately curved in representation of the actual form of the earth, we can here acquire some idea of the size of this Himalayan Range in relation to that of our planet. All four sections are taken at right angles to the line of the sectional views above described, their direction being from south-west to north-east in parallel lines, which are marked on the Snow Map. No. 1 goes through Muzafarābād and Nangā Parbat. No. 2 runs, at a distance of 90 or 100 miles from the first, from Bhimbar, through Islāmābād and Kargil, to the high mountains at the head of the Nubrā Valley. No. 3, at a distance of 80 miles from the last, starts from the plains by Jasrota and passes through Zānskār and Leh on to the beginning of the Kārākāsh drainage. No. 4, which is taken at a distance of 60 miles to the south-east of the preceding one, runs from near Hoshiyārpūr in the Panjāb through Kāngrā and Lāhol and Rupshu, &c., to the Lingzhīthang and Kuenlun plains, and ends at the Kuenlun Mountains.

A consideration of that which these sections depict will give, I think, a true idea of what a great mountain-chain or mountain-mass really is; it will show what the phrase "inequalities on the

earth's surface" really means; it will perhaps correct false notions of the suddenness and the separateness of mountain ranges which some may have acquired, while it should, by showing the enormous space over which great elevations of land exist, increase the impression of their real grandeur.

APPENDIX.

APPENDIX I.

DOGRĪ GRAMMAR.*

NOTE.—The following special marks have been adopted in Appendices I., II., and III., and for the native words and names of places given in the Index:—The cerebral *t*, *d*, and *r* are distinguished from the dental t, d, and r, by being put in Italics where the rest of the word is in Roman character, or by being put in Roman character if the rest of the word is in Italics: thus both tusā*r*a and *tusā*r*a* would imply that the *t* is dental and the *r* is cerebral. Again, the nasal *n* is expressed by *n* with a dot over it, thus, ṅ.

NOUNS SUBSTANTIVE.

1st Class: Masculine nouns ending in *ā*.

Singular.

Nominative	lauh*r*ā	*a boy.*
Genitive	lauh*r*e-dā, -de, -dī	*of a boy.*
Dative	lauh*r*e-kī *or* lauh*r*e-ī	*to a boy.*
Accusative	lauh*r*e-kī, *or* lauh*r*e-ī, *or* lauh*r*ā	*a boy.*
Ablative and Locative	lauh*r*e-thwāṅ, -vich, -par	*from, in, on a boy.*
Agentive	lauh*r*e-ne	*by a boy.*
Vocative	lauh*r*e-ā *or* ā lauh*r*ā	*O boy!*

Plural.

Nominative	lauh*r*e	*boys.*
Genitive	lauh*r*eṅ-dā, -de, -dī	*of boys.*
Dative	lauh*r*eṅ-kī *or* lauh*r*eṅ-īṅ	*to boys.*
Accusative	lauh*r*eṅ-kī, *or* lauh*r*eṅ-īṅ, *or* lauh*r*e	*boys.*
Ablative and Locative	lauh*r*eṅ-thwāṅ, -vich, -par	*from, in, on boys.*
Agentive	lauh*r*eṅ-ne	*by boys.*
Vocative	ā lauh*r*eṅ	*O boys!*

2nd Class: Masculine nouns not ending in *ā*.

Singular.

Nominative	*d*aṅgar	*a cow or ox.*†
Genitive	*d*aṅgare-dā, -de, -dī	*of a cow.*
Dative	*d*aṅgare-kī *or* *d*aṅgare-ī	*to a cow.*
Accusative	*d*aṅgare-kī, *or* *d*aṅgare-ī, *or* *d*aṅgar	*a cow.*

* For some preliminary remarks, see Chap. XXI.

† This is the general word for the species; cow, ox, and bull have their different names.

Ablative and Locative	daṅgare-thwāṅ, -vich, -par	*from, in, on a cow.*
Agentive	daṅgar-ne	*by a cow.*
Vocative	daṅgarā *or* ā daṅgar	*O cow!*

Plural.

Nominative	daṅgar	*cows.*
Genitive	daṅgareṅ-dā, -de, -dī	*of cows.*
Dative	daṅgareṅ-kī, *or* daṅgare-īṅ	*to cows.*
Accusative	daṅgareṅ-kī, *or* daṅgare-īṅ, *or* daṅgar	*cows.*
Ablative and Locative	daṅgareṅ-thwāṅ, -vich, -par	*from, in, on cows.*
Agentive	daṅgareṅ-ne	*by cows.*
Vocative	ā daṅgareṅ	*O cows!*

3rd Class: Feminine nouns.

Singular.

Nominative	bakrī	*a she-goat.*
Genitive	bakrīā-dā, -de, -dī	*of a she-goat.*
Dative	bakrīā-kī *or* bakrīā-ī	*to a she-goat.*
Accusative	bakrīā-kī, *or* bakrīā-ī, *or* bakrī	*a she-goat.*
Ablative and Locative	bakrīā-thwāṅ, -vich, -par	*from, in, on a she-goat.*
Agentive	bakrīā-ne	*by a she-goat.*
Vocative	bakriyā *or* ā bakrī	*O she-goat!*

Plural.

Nominative	bakriyāṅ	*she-goats.*
Genitive	bakrieṅ-dā, -de, -dī	*of she-goats.*
Dative	bakrieṅ-kī *or* bakrieṅ-īṅ	*to she-goats.*
Accusative	bakrieṅ-kī, *or* bakrieṅ-īṅ, *or* bakriyāṅ	*she-goats.*
Ablative and Locative	bakrieṅ-thwāṅ, -vich, -par	*from, in, on she-goats.*
Agentive	bakrieṅ-ne	*by she-goats.*
Vocative	ā bakriyāṅ	*O she-goats!*

ADJECTIVES.

1st Class: Adjectives ending in *ā*.

Singular.

Nominative, masculine	kālā	*black.*
feminine	kālī	
All other cases, masculine	kāle	
feminine	kālīā	

Plural.

Nominative, masculine	kāle
feminine	kaliyāṅ
All other cases, masculine	kaleṅ
feminine	kalieṅ

But when the substantive takes in the accusative the third, that is the nominative, form, the adjective will be in the corresponding form.

2nd Class: Adjectives not ending in *ā*;
as *chel* handsome, *jangalī* wild.

These undergo no change.

PERSONAL PRONOUNS.

First Person—Singular.

Nominative	maiṅ *or* auṅ	*I.*
Genitive	merā, mere, merī	*of me, my.*
Dative	mi-kī *or* mī	*to me.*
Accusative	mi-kī *or* mī	*me.*
Ablative and Locative	mere-thwāṅ, -vich, -par	*from, in, on me.*
Agentive	maiṅ	*by me.*

Plural.

Nominative	as	*we.*
Genitive	sārā	*of us, our.*
Dative	aseṅ-kī {sometimes the *kī* is left out, and sometimes the *k* alone is left out}	*to us.*
Accusative	aseṅ-kī	*us.*
Ablative and Locative	sāre-thwāṅ, -vich, -par	*from, in, on us.*
Agentive	aseṅ	

Second Person—Singular.

Nominative	tūṅ	*thou.*
Genitive	terā, tere, terī	*of thee, thy.*
Dative	tu-kī	*to thee.*
Accusative	tu-kī	*thee.*
Ablative and Locative	tere-thwāṅ, -vich, -par	*from, in, on thee.*
Agentive	toh	*by thee.*

Plural.

Nominative	tus	*you.*
Genitive	tusārā, tusāre, tusārī	*of you, your.*
Dative	tuseṅ-kī {sometimes the *kī* is left out, and sometimes the *k* alone is left out}	*to you.*
Accusative	tuseṅ-kī	*you.*

Ablative and Locative	tusen-thwāṅ, -vich, -par	*from, in, on you.*
Agentive	tuseṅ	*by you.*

thwārā is sometimes used for *tusārā*, chiefly I think in the part of Dugar at the very foot of the hills.

Third Person—Singular.

Nominative	o	*he, she, it.*
Genitive	us-dā, -de, -dī	*of him, of her, of it; his, her, its.*
Dative	us-kī *or* us-ī	*to him, to her, to it.*
Accusative	us-kī, us-ī, *or* o	*him, her, it.*
Ablative and Locative	us-thwāṅ, -vich, -par	*from, in, on him, her, it.*
Agentive	us-ne	*by him, her, or it.*

Plural.

Nominative	o	*they.*
Genitive	un-dā *or* une-dā, de, dī	*of them, their.*
Dative	une-kī *or* une-ī *	*to them.*
Accusative	une-kī *or* une-ī *	*them.*
Ablative and Locative	une-thwāṅ, -vich, -par	*from, in, on them.*
Agentive	une	*by them.*

DEMONSTRATIVE PRONOUNS.

e *this* or *these* is declined in a way corresponding to the personal pronoun third person, making is-dā, &c., *of this*, and in-dā *of these*, while the declension of o *that* or *those* is identical with it.

The demonstrative pronouns īā *or* iyā *this same*, and ūai *that same*, corresponding to yihī and wuhī in Hindostānī, are thus declined :

Singular.

Nominative	īā *or* iyā	*this same.*
Genitive	isse-dā, -de, -dī	*of this same.*
Dative	isse-kī	*to this same.*
Accusative	isse-kī	*this same.*
Ablative and Locative	isse-thwāṅ, -vich, -par	*from, in, on this same.*
Agentive	isse-ne	*by this same.*

Plural.

Nominative	īai	*these same.*
Genitive	indāī, indeī, indīī	*of these same.*
Dative	inneīṅ *or* inneīṅ-kī	*to these same.*
Accusative	inneīṅ *or* inneīṅ-kī	*these same.*
Ablative and Locative	inneīṅ-thwāṅ, -vich, -par	*from, in, on these same.*
Agentive	inneīṅ	*by these same.*

* Query, *une-īṅ*.

Singular.

Nominative	ūai	*that same.*
Genitive	usse-dā, -de, -dī	*of that same.*
Dative	usse-kī *or* usse-ī	*to that same.*
Accusative	usse-kī *or* usse-ī	*that same.*
Ablative and Locative	usse-thwāṅ, -vich, -par	*from, in, on that same.*
Agentive	usse-ne	*by that same.*

Plural.

Nominative	ūai	*those same.*
Genitive	unneīṅ-dā, -de, -dī	*of those same.*
Dative	unneīṅ-kī	*to those same.*
Accusative	unneīṅ-kī	*those same.*
Ablative and Locative	unneīṅ-thwāṅ, -vich, -par	*from, in, on those same.*
Agentive	unneīṅ	*by those same.*

INDEFINITE PRONOUNS.

koī, *some one*, *anyone*, or *any* applied to persons.

Singular.

Nominative	koī	*anyone or any.*
Genitive	kuse-dā, -de, -dī	*of any.*
Dative	kuse-kī	*to any.*
Accusative	kuse-kī, kuse-ī, koī	*any.*
Ablative and Locative	kuse-thwāṅ, -vich, -par	*from, in, on any.*
Agentive	kuse	*by any.*

Plural.

Nominative	koī	*any.*
Genitive	kune-dā, *or* kun-dā, de, dī	*of any.*
Dative	kune-kī, *or* kune-īṅ	*to any.*
Accusative	kune-kī *or* kune-īṅ	*any.*
Ablative and Locative	kune-thwāṅ, -vich, -par	*from, in, on any.*
Agentive	kune	*by any.*

kichh, *something*, *anything*, or *any* applied to things.

Singular.

Nominative	kichh	*any.*
Genitive	kuse-dā, -de, -dī	*of any.*
Dative	kuse-kī	*to any.*
Accusative	kuse-kī, kuse-ī, *or* kichh	*any.*
Ablative and Locative	kuse-thwāṅ, -vich, -par	*from, in, on any.*
Agentive	kuse	*by any.*

Plural.

Nominative	kichh	*any.*
Genitive	kine-dā, -de, -dī, *or* kinie-dā, -de, -dī	*of any.*
Dative	kiniāṅ-kī	*to any.*
Accusative	kiniāṅ-kī	*any.*
Ablative and Locative	kinie-thwāṅ, -vich, -par	*from, in, on any.*
Agentive	kiniāṅ	*by any.*

jo koī *whoever,*

is declined as *jo* and *koī* are declined separately. For *jo* see next page

For *whatever* je kichh is used.

Masculine	kitneiṅ *or* kineiṅ	*several or many.*
Feminine	kitniāiṅ or kiniāiṅ	

Singular.

Masculine	kitnā *or* kinā	*how much.*
Feminine	kitnī *or* kinī	

Plural.

Masculine	kitne *or* kine	*how many.*
Feminine	kitniāṅ *or* kiniāṅ	

INTERROGATIVE PRONOUNS.

Singular.

kun *who?*

Nominative	kun	*who?*
Genitive	kus-dā, -de, -dī	*of whom? whose?*
Dative	kus-ī (*usual*) *or* kus-kī	*to whom?*
Accusative	kus-ī (*usual*) *or* kus-kī	*whom?*
Ablative and Locative	kus-thwāṅ, -vich, -par	*from, in, on whom?*
Agentive	kus-ne	*by whom?*

Plural.

Nominative	kun	*who?*
Genitive	kun-dā, -de, -dī, *or* kune-dā, -de, -dī	*of whom? whose?*
Dative	kune-kī *or* kune-īṅ	*to whom?*
Accusative	kune-kī *or* kune-īṅ	*whom?*
Ablative and Locative	kune-thwāṅ, -vich, -par	*from, in, on whom?*
Agentive	kune	*by whom?*

keh *what?*

Singular.

Nominative	keh	*what?*
Genitive	kus-dā, -de, -dī (*usual*) *or* kis-dā, -de, -dī	*of what?*
Dative	kus-kī (*usual*) *or* kis-kī	*to what?*
Accusative	kus-kī (*usual*) *or* kis-kī	*what?*
Ablative and Locative	kus-thwāṅ, -vich, -par (*usual*) *or* kis-thwāṅ, -vich, -par	*from, in, or on what?*
Agentive	kus-ne (*usual*) *or* kis-ne	*by what?*

Plural.

Nominative	keh	*what?*
Genitive	kune-dā, -de, -dī	*of what?*
Dative	kune-kī *or* kune-īṅ	*to what?*
Accusative	keh	*what?*
Ablative and Locative	kune-thwāṅ, -vich, -par	*from, in, on what?*
Agentive	kune	*by what?*

kokā *which?*

	Singular.	*Plural.*
Masculine	kokā	koke
Feminine	kokī	kokiyāṅ

RELATIVE PRONOUN.

Singular.

Nominative	jo	*he who.*
Genitive	jis-dā, -de, -dī	*he whose, or he of whom.*
Dative	jis-kī *or* jis-ī	*he to whom.*
Accusative	jis-kī *or* jis-ī	*he whom.*
Ablative and Locative	jis-thwāṅ, -vich, -par	*he from, in, on whom.*
Agentive	jis-ne	*he by whom.*

Plural.

Nominative	jo	*they who.*
Genitive	jine-dā, -de, -dī	*they whose, or they of whom.*
Dative	jine-kī *or* jine-īṅ	*they to whom.*
Accusative	jine-kī *or* jine-īṅ	*they whom.*
Ablative and Locative	jine-thwāṅ, -vich, -par	*they from, in, on whom.*
Agentive	jine-eṅ *or* jineṅ	*they by whom.*

REFLECTIVE PRONOUNS.

First, Second, and Third Persons—Singular and Plural.

Nominative	apūṅ	*self or selves.*
Genitive	apnā, apne, apnī	*of self or selves, or own.*
Dative	apūṅ-kī	*to self or selves.*
Accusative	apūṅ-kī	*self or selves.*
Ablative and Locative	apne-thwāṅ, -vich, -par	*from, in, on self or selves.*
Agentive	apūṅ	*by self or selves.*

VERBS.

The verb *honā*, to be.

Indefinite Tense.

auṅ	hundā	*fem.* hundī	*I*	*am, may be, had been, &c.*
tūṅ	hundā	*fem.* hundī	*thou*	
o	hundā	*fem.* hundī	*he, she, or it*	
as	hunde	*fem.* hundiyāṅ	*we*	
tus	hunde	*fem.* hundiyāṅ	*you*	
o	hunde	*fem.* hundiyāṅ	*they*	

The verb agrees in gender with the subject.

*Compound Present.**

auṅ	hundā hāṅ	*I am.*
tūṅ	hundā haiṅ	*thou art.*
o	hundā hai	*he is.*
as	hunde hāṅ	*we are.*
tus	hunde ho	*you are.*
o	hunde haiṅ	*they are.*

If the subject is feminine, the participle becomes *hundī* in the singular, and *hundiyān* in the plural.

* There is also a simple present of the verb to be; it has been written for me in two ways, the one *hāṅ, haiṅ, hai, hāṅ, ho, haiṅ*, the other the same with the aspirate left out. In Dogrī the aspirate is often pronounced very lightly indeed, and it is not unlikely that in that tense it has come to be left out in writing, but still exists in the sound.

Imperfect.

auṅ	thā	*fem.* thī	*I was.*
tūṅ	thā	*fem.* thī	*thou wast.*
o	thā	*fem.* thī	*he, she, or it was.*
as	the	*fem.* thiyāṅ	*we were.*
tus	the	*fem.* thiyāṅ	*you were.*
o	the	*fem.* thiyāṅ	*they were.*

Compound Imperfect.

auṅ	hundā thā	*fem.* hundī thī	*I was* (continuative).
tūṅ	hundā thā	*fem.* hundī thī	*thou wast.*
o	hundā thā	*fem.* hundī thī	*he, she, or it was.*
as	hunde the	*fem.* hundiyāṅ thiyāṅ	*we were.*
tus	hunde the	*fem.* hundiyāṅ thiyāṅ	*you were.*
o	hunde the	*fem.* hundiyāṅ thiyāṅ	*they were.*

Simple Preterite.

auṅ	hoā	*fem.* hoī	*I was* (past definite).
tūṅ	hoā	*fem.* hoī	*thou wast.*
o	hoā	*fem.* hoī	*he, she, or it was.*
as	hoe	*fem.* hoiyāṅ	*we were.*
tus	hoe	*fem.* hoiyāṅ	*you were.*
o	hoe	*fem.* hoiyāṅ	*they were.*

Compound Preterite.

auṅ	hoā	hāṅ	*we have been.*
tūṅ	hoā	haiṅ	*thou hast been.*
o	hoā	hai	*he has been.*
as	hoe	hāṅ	*we have been.*
tus	hoe	ho	*you have been.*
o	hoe	haiṅ	*they have been.*

The participle being changed for the feminine, as before.

Pluperfect.

auṅ	hoā	thā	*I had been.*
tuṅ	hoā	thā	*thou hadst been.*
o	hoā	thā	*he had been.*
as	hoe	the	*we had been.*
tus	hoe	the	*you had been.*
o	hoe	the	*they had been.*

Here both hoā and thā will change their termination for the feminine.

Aorist.

aun̈	hoān̈	*I may be.*
tūn̈	hoain	*thou mayest be.*
o	hoe	*he may be.*
as	hochai *	*we may be.*
tus	ho	*you may be.*
o	hon	*they may be.*

Future.

aun̈	hoṅg	*I shall be.*
tūn̈	hogā (hogī *in fem.*)	*thou wilt be.*
o	hog	*he will be.*
as	hoge (hogiyān̈ *in fem.*)	*we shall be.*
tus	hoge (hogiyān̈ *in fem.*)	*you will be.*
o	hoṅgan	*they will be.*

Imperative.

tūn̈	ho	*be thou.*
tus	ho	*be you.*

Verbal Noun.

honā	*being.*
hone-dā, -de, -dī	*of being.*

and so on.

Noun of Agency or Condition.

hone-wālā *that which will become* (the final *a* changing its termination like an adjective).

Conjunctive Participle.

hoī-kai *having been.*

Adverbial Participle.

hunde-hī *on the point of being.*

As in Hindostānī, there is but one conjugation, and the formation of it proceeds in nearly the same way as in that language; we will take, as an example, the verb *galāna*, to speak.

Root	galā	
Infinitive	galānā	*to speak.*
Present participle	galāndā	*speaking.*
Past participle	galāya	*spoken.*

* This form has been given me, but I am not familiar with it; it wants confirmation.

Indefinite.

auṅ	galāndā	*fem.* galāndī	*I*	*speak, &c.*
tūṅ	galāndā	*fem.* galāndī	*thou*	
o	galāndā	*fem.* galāndī	*he or it*	
as	galānde	*fem.* galāndiyāṅ	*we*	
tus	galānde	*fem.* galāndiyāṅ	*you*	
o	galānde	*fem.* galāndiyāṅ	*they*	

Present.

auṅ	galāndā hāṅ	*I am*	*speaking.*
tūṅ	galāndā haiṅ	*thou art*	
o	galāndā hai	*he or it is*	
as	galānde haṅ	*we are*	
tus	galānde ho	*you are*	
o	galānde haiṅ	*they are*	

The participle taking *ī* (*sing.*) and *iyāṅ* (*plu.*) when the subject is feminine.

Imperfect.

auṅ	galāndā thā	*I was*	*speaking.*
tūṅ	galāndā thā	*thou wast*	
o	galāndā thā	*he or it was*	
as	galānde the	*we were*	
tus	galānde the	*you were*	
o	galānde the	*they were*	

With a feminine subject it will be *galāndī thī* in the singular, and *galāndiyāṅ thiyāṅ* in the plural.

Simple Preterite.

maiṅ	galāyā	*I*	*spoke.*
toh	galāyā	*thou*	
us-ne	galāyā	*he or it*	
aseṅ	galāyā	*we*	
tuseṅ	galāyā	*you*	
une	galāyā	*they*	

In this and the next two tenses the participle varies so as generally to agree in gender and number with the *object;* the rule here is the same, and is subject to the same qualifications, as in Hindustānī.

Compound Preterite.

maiṅ	galāyā hai	*I have*	*spoken.*
toh	galāyā hai	*thou hast*	
us-ne	galāyā hai	*he or it has*	
aseṅ	galāyā hai	*we have*	
tuseṅ	galāyā hai	*you have*	
une	galāyā hai	*they have*	

Pluperfect.

maiṅ	galāyā thā	*I had*	*spoken.*
toh	galāyā thā	*thou hadst*	
us-ne	galāyā thā	*he or it had*	
aseṅ	gālāyā thā	*we had*	
tuseṅ	galāyā thā	*you had*	
une	galāyā thā	*they had*	

In the above two tenses the auxiliary also may vary with the gender and number of the object.

Aorist.

auṅ	galāāṅ	*I*	*may speak.*
tūṅ	galāe	*thou*	
o	galāe	*he, she, or it*	
as	galāeṅ	*we*	
tus	galāo	*you*	
o	galāeṅ	*they*	

Future.

auṅ	galāāngā	*I shall speak.*
tūṅ	galāegā	*thou wilt speak.*
o	galāegā	*he, she, or it will speak.*
as	galāenge	*we shall speak.*
tus	galāoge	*you will speak.*
o	galāenge	*they will speak.*

Imperative.

tūṅ	galā	*speak.*
tus	galāo	

Verbal Noun.

galānā	*speaking.*
galane -dā, -de, -dī	*of speaking.*

And so on.

Noun of Agency.

Mas. sing.	galāne-wālā	*speaker.*
Fem. sing.	galāne-wālī	
Mas. plu.	galāne-wāle	*speakers.*
Fem. plu.	galāne-wāliyāṅ	

Conjunctive Participle.

galāī-ke *having spoken.*

The passive voice is made by conjugating the verb *jānā*, to go, with the past participle; as from *jalānā*, to set fire to, comes *jalāyā jānā*, to be set on fire.

Irregularities in the verbs seem to be very few; *jānā*, to go, makes *giyā* in the past participle, except in certain combinations, when it forms the participle according to the usual rule, as *jāyā karnā*, to continue going; *karnā*, to do, makes *kītā*, done; and there are a few other exceptions.

APPENDIX II.

VOCABULARIES COMPARED. (*For Remarks, see Chap.* XXI.)

ENGLISH.	DIALECTS OF THE OUTER HILLS.		DIALECTS OF THE MIDDLE MOUNTAINS.				KASHMĪR.
	Dogrī.	Chibhālī.	Rāmbanī.	Bhadarwāhī.	Pāḍarī.	Kishtwāṛī.	Kashmīrī.
one	ek	ek	ek	ek	ek	ak	āk
two	do	do	dī	dūī	dū	tsī	zö‖
three	tre	tre	cheī	klai	klai	tre	tre
four	chār	chār	chār	tsor	tsūr *or* tsor	tsor	tsor
five	panj	panj	pānts	pānts	pānz	pānts	pānts
six	che	che	shā	shā	tse *or* tsa	she	she
seven	sat	sat	sāt	sat	sat	sat	sat
eight	ath	ath	ath	ath	ath	eth	öth
nine	nau	nau	nau	nau	nau	nauṅ	nau
ten	das	das	das	das	dash	dā	dā
twenty	vī*	bī	bī	bī	bī	ū	wū
fifty	panjā	panjā	panjā	pantsā	—	pāntsā	pāntsā
hundred	sau	sau	sau	sau	—	hath	hath
I	maiṅ *and* auṅ	maiṅ	mī	auṅ	auṅ	bū *or* bo	bo
my	mera	mārā	menū	merū †	men *and* hen	meaun	mīon
we	as	—	as	as	as	asī	as
our	sārā	—	asoṅ	isho	henan	asūnder	son
thou	tuṅ	tū	tū	tū	tū	tū	tsö
thy	terā	tūrā	tenū	terū	tenan	—	chon
you	tus	—	tus	tū (?)	tus	—	tse
your	tusārā	tusārū	tusoṅ	tusho	tenan	tsūāṅ §	chon
he	o	o	sū	—	o	hor	sū
his	usdā	usdā	tesoṅ	userū	tasar	hūsan	humsun
they	o	o	sū	en *or* in ‡	—	yum (?)	
their	undā	undā	ane	userū	tenkar	yumanum	

hand	hath	hath	hāth	hath	hath	hathī	hath
foot	pair	per	khur	pāa	khur	khor	khor
nose	nak	nak	nāk	nak	nak	nast	nast
eye	akhī	akh	achī	atsī	ach *and* akh	ach	ach
mouth		mūṅ	āshū	ūt	as	aus	âs **
tooth	*dand*	*dand*	*dānt*	*dand*	*dand*	*dand*	*dand*
ear	kan	kan	kan	kan	kan	kan	kan
hair	vāl	bāl	kesh *and* pa-phariāṅ	bāl	sharwār ††	kī	wāl
head	sir	sir	shir	dog	*rot*	īoth	kal
tongue	jib	jīb	jib	zib	jib	zeo	zeo
belly	*did*	*did*	pet	*did*	pet	yad	yad
back	pith	kand	pith	pith	pith	shāna	shāna
iron	lohā	lohā	loh	lohā	lohā	shistar	shistar
gold	sonā	sonā	sunā	sonū	sunā	shongo	son
silver	chāndī	chāndī *and* rūpā	chāndī	ropo	rup *and* rupā	zūn	rup
father	pyū	pyū	bābā	boā	bābā	bābā	bab, mo, *and* bābā
mother	māī	mā	ammā *and* īyā	haiyā	ijā *or* īj	ammā	mâī, dĕd,*** *and* āpā
brother	brā	brā	bhūā	glā	bāū *and* bhāī ‡‡	bhāījī *and* bhāī ‖‖	bâī
sister	bahīṅ	bahn	bahin	bahin	ded *and* bahīṅ §§	bhingedī *and* bahīṅ ¶¶	baīn *and* bĕndĕd ***

* Often used in the plural, thus: *ath viyāṅ*, eight score.

† Fem. sing., *merī*; mas. plu., *merū*; fem. plu., *meriyāṅ*.

‡ *en* = those, *in* = these.

§ I am not sure whether this is not *thy*.

‖ There is a vowel-sound in Kashmīrī which is not provided for in the alphabetical system used for the other dialects; it is like the *eu* in French, or *ö* in German; or it may be said to be like *a* in Hindostānī, elongated, but not elongated in such a way as to make it like *ā*; I have provisionally put *ö* to represent it.

¶ For "his" I have also *tusans*, and for "theirs" I have *tasan hand*.

** The character *â* used in the Kashmīrī vocabulary, denotes a very broad sound, as in the English "awl," somewhat different from that of *ā*; Sir G. Campbell makes the same distinction.

†† The side-locks are called *pāloti*.

‡‡ *bāū* = elder brother; *bhāī* = younger brother.

§§ ded = elder sister; bahīṅ = younger sister.

‖‖ bhāījī = elder brother; bhāī = younger brother.

¶¶ bhingedī = elder sister; bahīṅ = younger sister.

*** ĕ for the Kashmīrī language denotes a sound like that of the *e* in *them*.

VOCABULARIES COMPARED—*continued.*

ENGLISH.	DIALECTS OF THE OUTER HILLS.		DIALECTS OF THE MIDDLE MOUNTAINS.				KASHMĪR.
	Dogrī.	Chibhālī.	Rāmbanī.	Bhadarwāhī.	Pādarī.	Kishtwārī.	Kashmīri.
man	ādmī	ādmi *and* jānā	mānū	mahānū	mān	mān	mānyu
woman	janānī	trīmat	zanān	kwaṅsh	gīūn	—	zenān
wife	istrī	—	—	kwaṅsh *and* klī	zel	zanāṅ	kulai *and* āshan
child							
son	putar	pūtar	lokū	ko	kwā	shūr	nichu *and* gubar
daughter	dhī	dhī	kūrī	koī	kūī	korī	kor *and* kūr
slave	ghulām, banda	—	pālak *and* kamā	—	—	—	ghulām
cultivator	jamīndar	zamīndār	zamīndār	zamīndār	jamīndār	zamīndar	gurust
shepherd	—	pālā *and* gwālā	gwāl	gaddī *and* puhāl	gwāl *and* phāl	gwāl	phâl
God	parmeshwar	*khudā*	parmeshar	parmeshar	parmesar	—	*khudā*
devil	—	shaitān	masān	*none*	*none*	—	masharān
sun	sūraj	dī	sūrj	dihāro	dīs	akhtāb	ākhtāb
moon	chand	chan	chāndnī	chāndnī	chandnī *	tsandar	zūn
star	tārā	tārā	tārā	tārā	tārā	tārak	tārak
fire	ag	ag	āg	āg	āg	nâr	nār
water	jal	pānī	pānī	pānī	pānī	pāīṅ	āb
house	ghar	ghar	ghar *and* gī	ghar	obar, ghar, *and* gī	gharo	ghör *and* lör
horse	ghorā	ghorā	ghorū	ghoro	ghorā	gūr	gur
cow	gāe	gā	gāo	gau *and* batsī	gā	—	gāo
dog	kuttā	kuttā	shūnā	kuttar	kuttar (*f.* kuttarī)	hon	hūn
cat	billī	billī	bilār	biliā (*f.* billī)	balā (*f.* balāī)	brār	brer
cock	kukar†	kukar	kukar	kukar	kukar	kokar	kokar
duck	batak	batak	batak	batak	—	—	batak
ass	khotā	khotā	khotū	khoto (*f.* khotī)	—	khar	*khar*
camel	ūṅt	ūṅt	—	ūṅt	—	—	ūṅt
bird	pakru	pakrū	pakrū	pakrū	pakrū		
go	jā	{ juliyā *and* gachiyā‡ }	gā	gā	gā	gats	gats
eat	khā	khā	khā	khā	khā	khīū	khe

sit	beh	bij	bime	bish	bish	bīūn-be	be
come	ā	acheā	je	eī	illa	yorī	wolo
beat	mār	māriyā *and* kutiyā‡	mār	mār *and* kut	mār *and* kut	tsots	lāyas
stand	khalā ho	khalā ho	uthe karū	kharó-bove	khar bho	hoshwat	wadanī roz *and* wazanī roz
die	mar	mar	mar	mar	mar	mar	
give	de	de	de les	de	de	dīūs	dis
run	daur	daur	daur	daur	daur	doro	dor *and* tikh
up	ūpar	ūpar	ūbū	bāgā	khārī	hosh	herī *and* pĕt
down	khal	bun	khalo	undóī	ūn	bŏn	bŏn
before	āge	āge	āgaro	agarī	āgar	broṅt	bont
behind	piche	pīche	pato	patar	pathonher *and* patlakher	poth	pat
near	nehrī	nehre	nerī	nerū	ner *and* negihana	—	nazdīk
far	dūr	dūr	dūr	dūr	dūr	dūr	dūr
who	kun	kon	kus	kaserū	kān	kon	kus
what	keh	ke	kū	kun *and* kunen	kī	kyā	kyā
why	kīāṅ	kīṅ	kī	koyā	kyas	—	kyāzī *and* kyūṅ
and	hor *and* te	hor	or	—	—	—	be
but	par	—	par	—	—	—	lekin
if	jekar	jīāṅ	ze	—	—	—	hargāh
yes	āho	ahāṅ	halā	hāṅ	hāṅ	—	
no	na	nāṅ	nahīṅ	nā	nā	noe	na
good	changā *and* kharā	—	jawān	kharū	cher *and* kharā	—	zabar *and* jān
bad	mārā *and* burā	—	—	burū *and* mārū	—	—	yĕch
high	uchā	—	ūkarū	uchu	adham	—	tud *and* thud

* In the upper part of the Bhutnā Valley in Pādar the word for moon is *zosan*.

† hen = kukarī.

‡ These are past participles.

ENGLISH.	DARD DIALECTS.			ENGLISH.	DARD DIALECTS.		
	Dialect of Astor.	Dialect of Gilgit.	Dialect of Dāh.		Dialect of Astor.	Dialect of Gilgit.	Dialect of Dāh.
one	ek	ek	ek	gold	son	sun	ser *or* sir
two	dū	du	dū (like *u* in French).	silver	rūp	rūp	mul
three	*t*re	*tch*e *or* che *	trā	father	bābo	bābo, mālo	bo
four	chār	chār	chor	mother	ājī	ājī, mā	āye
five	push	poiṅ	poṅsh	brother	kāko (elder) *zh*ā (younger)	jā	baio (elder) vā (younger)
six	shā	shā	shā	sister	kākī (elder) sas (younger)	sā (*to call*, kākī)	kākī (elder) sas (younger)
seven	sat	sat	sat	man	manū*zh*	manu*zh*o‡	mush
eight	āsh*t*	a*tch* *	āth	woman	cheī	cheī	*tch*īgā
nine	nauṅ	nau	nūṅ	wife	gren	gren	*tch*īgā
ten	daī	dāī	das	child	—	pu*tch*	
twenty	bī	bī	bijhā	son	puch (bāl = boy)	pu*tch* (baby-boy = shū)	biyū
fifty	du bī ka daī	dū bī ka dāī	dū bī jhū dāsh	daughter	mulāī	di (baby-girl = molaī)	muleī
hundred	shal	shal	sho	slave	bādo	maristan	satukspo
I	mo	mā	mo	cultivator	grastī	grasto	
my	meo *or* mīo	mai	mī bet	shepherd	paiyāl	paiyālo	
we	be	charbīo †	asī mush	God	khudā	khudā	khudā
our	—	aseī		devil	shaitān	shaitān *or* iblis	shaitān
thou	tū	tū	tī	sun	sūrī	sūrī	sūrī
thy	toṅ	thāī		moon	yūn	yūn	gyun
you	—	tso	tsī mush	star	tāro	tāro	tūrī
your	—	tsāī	tsī bun	fire	phū	agār	*gh*ul
he	*zh*o	ro	pho	water	woī	woī	wūā
his	—	rasāī	tes	house	gosh	go*t*	go*t*
they	—	āī (far) anī (near)	phe	horse	ashp	ashpo	āpsh
their	*zh*no	rīneī (far) anīneī (near)	tenbun	cow	gāo *or* gau	go	go
hand	hath	hath	hath	dog	shū	shūṅ	shūā
foot	pā	pā	kūtī	cat	pushī *and* pishū	būshī	billū
nose	noto	nato	noto	cock	koko = cock kokoī = hen	karkā-mash	byāpo,§ byāmo = hen
eye	achī	a*tch*ī	āthī	duck	batak	bārash	
mouth	āṅzo	āī	ūzī	ass	*zh*ākun	jakun	*kh*ar
tooth	doṅī	doṅī	danī				
ear	kun	kun	kanī				
hair	jāko	jakur	zhākur				
head	shish	shish	shish				
tongue	zip	jip	gip				
belly	*d*er	*d*er	war				
back	*d*āk	dākī	puth				
iron	chimar	chīmar	chingar				

* The consonantal sound in these words has the same relation to the ordinary sound of *ch* as the cerebral *d* or *t* has to the dental *d* or *t*, it is *ch* sounded far back on the palate; in default of a recognised character for it I provisionally use *tch*.

† I have this down, but consider that it wants to be verified.

‡ For *man*, as distinguished from *woman*, the word is *mushā*.

§ These terminations are Tibetan.

ENGLISH.	DARD DIALECTS.			ENGLISH.	DARD DIALECTS.		
	Dialect of Astor.	Dialect of Gilgit.	Dialect of Dāh.		Dialect of Astor.	Dialect of Gilgit.	Dialect of Dāh.
camel	ūṅ*t*	ūṅ*t*		behind	pāto	pha*t*ū	*z*hakunā
bird	—	bring *		near	ele	kachi	āboni
go	bo	bo	byun	far	dūr	dūr	dur
eat	khā	kha	khā	who	koī	ko	kyāno bet
sit	bet	beī	bāsh	what	yok	jek	ye bet
come	e	wa	ye, ānī	why	—	ke	
beat	ku*t*e	shida	kūti	and	ka	ka	
stand	hunbo	hunbo	ūthe	but	—	akhan	
die	mū	mu	mu, mulā	if	—	—	
give	de	de	dī	yes	āwā	āwā	bet
run	logobo	haita	bīhyon	no	ne	nush	nish
up	prāde	ajā	onār	good	mish*ta*	—	
down	kūlī	khirī	kharā	bad	katse	kach	
before	mu*t*ro	mutcho (near) yar (far)	yārbū	high			

* *bring* is a general word for bird; *chāī* = sparrow.

APPENDIX III.

PHRASES IN RĀMBANĪ AND BHADARWĀHĪ.

ENGLISH.	RĀMBANĪ.	BHADARWĀHĪ.
What is your name?	Tenū kū nām chu.	Tero kun hai (?) nao.
How old is this horse?	Kitā variyāṅ sānū ghorū chu.	E ghora katar varicki ṛue.
How far is it from here to Kashmir?	Itāātā Kashmír kītī dūr chi.	Itthe keta katarī dūr hai (?) Kashmīr.
How many sons are there in your father's house?	Tenū bābā sane gī kitā putar chā.	Tashū boāre ghare katar ko han.
I have walked a long way to-day.	Ādz as dūr ātā āwa sam.	Ādze auṅ barī dūr jo.
The son of my uncle is married to her sister.	Mine patriye sanū lokū tesā zanānī saniyā bahinī sāthī byātu matū cho.*	
In the house is the saddle of the white horse.	Gī antar sufed ghore sanī kātī chī.	Ghar antar zan ghore dī kātī ahe.
Put the saddle upon his back.	Kātī lāgo.†	Ghore par tsārā kātī.
I have beaten his son with many stripes.	Tesue loke matī mān datī am.	Eserū ko glābū māro mīṅ.
He is *grazing cattle on the top of the hill*.	Phār shire beṅ māl tsārte chā.‡	Es dhār ūpar māl tsarne lagarūe.
He is *sitting* on a horse under that tree.	Is butū khal ghore beṅ cho.	Es bute het ghore ūpar bishnū.
His brother is *taller* than his sister.	Tesoṅ brā teshuā (? teshnā) bahinī ātā ūkarū chu.	Eserū glā bahīṅ kar badī ahe.
The price of that is two rupees and a half.	Teson mul rupeya *dh*āī chu.	Eserū mul *dh*āī rupeye āhe.
My *father* lives in that small house.	Menūbāl is mate gharū mads rānchu.	Merū boa es uikarī ghar bishī.
Give this rupee to him.	Yū rupeyū tes dāt.	Ese rupeya de.
Take those rupees from him.	Yū rupeyū tesātā genī ānū.	Eskar rupeya ānā.
Beat him well and bind him with ropes.	Tes dabī tā mār dāt gazrā sāthī gant thas.	Es glab kūt dangarī kar kinū bāndas.
Draw water from the well.	Khūā ātā pānī kārū.	Divarī kar pānī ān.
Walk before me.	Mī agar agar chale.	Mere agarī gā.
Whose boy comes behind you?	Kusoṅ lokū tī patā patā en chut.	Kaserū ko magar lagerū tūī.
From whom did you buy that?	Kasātā tī mule gin chut.	Teṅ eskar kiskar ahnū.
From a shopkeeper of the village.	Gāmū sane hattiwāle ātā.	Glonerū hattīwale kar āhnū.

* "to the sister of that woman."   † "place the saddle."   ‡ *tsārte chā* is plural.

APPENDIX IV.

ROUTES.

LIST OF THE ROUTES GIVEN.

N.B.—The number to each route corresponds with that attached to the same route in the Political Map.

1. From Jummoo by Banihāl to Sirīnagar.
2. From Jummoo by Budil to Sirīnagar.
3. Cross route from Jummoo to Rājāorī.
4. From Bhimbar by Rājāorī and the Pīr Panjāl to Sirīnagar.
5. Cross route from Rājāorī to Pūnch.
6. From Jhelam by Pūnch to Sirīnagar.
7. From Marī to Sirīnagar.
8. From Abbotābād by Muzafarābād to Sirīnagar.
9. From Sirīnagar to Gilgit and beyond.
10. From Sirīnagar by Deosai to Skārdū.
11. From Sirīnagar by Drās to Skārdū.
12. From Sirīnagar to Leh.
13. From Sirīnagar to Kishtwār.
14. From Jummoo by Chanenī to Kishtwār.
15. From Jummoo by Bhadarwāh to Kishtwār.
16. From Mādhopūr by Bhadarwāh to Kishtwār.
17. From Chamba by Bhadarwāh to Kishtwār.
18. From Kishtwār by Kargil to Leh.
19. From Kishtwār by Zānskār to Leh.
20. From Pālampūr in Kāngrā by Kulu to Leh.
21. From Simla by Wāngtū and Spitī to Leh.
22. From Leh by Chorbat to Skārdū.
23. From Leh by Kārākoram to Yārkand; summer route.
24. From Leh by Kārākoram to Yārkand; winter route.
25. From Leh by Chāngchenmo to Yārkand; western route.
26. From Leh by Chāngchenmo to Yārkand; middle route.
27. From Leh by Chāngchenmo to Yārkand; eastern route.
28. From Leh to Gar.
29. From Pālampūr by Chāngchenmo to Yārkand, avoiding Leh.
30. From Pālampūr by Kārākoram to Yārkand, avoiding Leh.

Route 1.—*From Jummoo by Banihāl to Sirīnagar.*

(12 marches: 177 miles.)

Jummoo is 90 miles from Lāhor and 80 miles from Amritsar; the road from those two places can be traversed by carts and by camels as far as Jummoo, but not beyond.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jummoo	0	1200	
Dansāl	1	1840	17
Kiramchi	2	2500	16
Mīr	3	4800	13
Lāndar	4	4700	11
Bilaut	5	5150	14
Rāmban	6	2535	10
Rāmsū	7	4070	19
Devgol	8	5580	14
Vernāg	9	6000	15
Islāmābād	10	5600	15
Avāntipūr	11	5350	16
Sirīnagar	12	5235	17
			177

Between stages 4 and 5 the Lārū Lārī Pass, height 8200 feet, and between 8 and 9 the Banihāl Pass, 9200 feet, are crossed. Between 5 and 6 the Chīnāb is crossed by a wooden bridge.

This road can be traversed by laden ponies, but in many places the way is difficult for them. It is closed for all horses for two months or so from Christmas onwards, on account of the depth of snow on Banihāl Pass. For two or three days together it may be closed for men, who cannot cross that Pass when the wind is violent and the snow is deep.

Route 2.—*From Jummoo by Budil to Sirīnagar.*

(12 marches: 129 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jummoo	0	1200	
Akhnūr	1	1142	18
Kapeyankī Baulī	2		7
Paunī	3		8
Chele	4		8
Nār	5		12
Bhagolī	6		8
Budil	7		5
Delhi	8		11
Nāzim Garhī	9		14
Shapeyan	10	6715	11
Kahnpūr	11		15
Sirīnagar	12	5235	12
			129

This is a foot-road, seldom or never used for laden ponies. Akhnūr is the more usual starting point for it than Jummoo. Between stages 8 and 9 the Budil Pass, a high Pass, is crossed. It is open for about seven months in the year.

ROUTE 3.—*Cross route from Jummoo to Rājāorī.*

(6 marches: 77 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jummoo	0	1200	
Akhnūr	1	1142	18
Chaukī Chorā	2	2150	13½
Thandāpānī	3		13
Dharmsāla	4		9½
Syālsūī	5		9
Rājāorī	6	3094	14
			77

The Chīnāb is crossed by boat at Akhnūr, which is on left bank. The road is fit for laden ponies. At Rājāorī we come to stage No. 4 of route 4. By combining the two routes we find that from Jummoo by Rājāorī and the Pīr Panjāl to Sirīnagar is 14 marches, 169 miles.

ROUTE 4.—*From Bhimbar by Rājāorī and the Pīr Panjāl to Sirīnagar.*

(12 marches: 148 miles.)

Bhimbar is 30 miles from Gujrāt on the Grand Trunk Road. Gujrāt is 71 miles from Lāhor.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Bhimbar	0		
Saidābād	1		15
Naushahra	2		12½
Changas Sarāe	3		13½
Rājāorī	4	3094	15
Thannā	5		14
Baramgalā	6		10
Poshiāna	7		10
Alīābād Sarāe	8		11
Hirpūr	9		14
Shapeyan	10	6715	6
Kahnpūr	11		15
Sirīnagar	12	5235	12
			148

Between stages 5 and 6 the Ratan Pass, 8200 feet, and between stages 7 and 8 the Pīr Panjāl, a Pass 11,400 feet high, are crossed. The road is passable for laden ponies, though in some places rather difficult for them. It is open for about seven months in the year.

ROUTE 5.—*Cross route from Rājāorī to Pūnch.*

(3 marches: 44 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Rājāorī ..	0	3094	
Thanna	1		14
Sūran ..	2		16
Pūnch ..	3	3300	14
			44

Between stages 1 and 2 the Ratan ridge is crossed at about 8000 feet altitude. Laden ponies can go by this road.

By combining route 3, route 5, and route 6 from stage No. 8 onward, we get this—From Jummoo, by Rājāorī and Pūnch, to Sirīnagar, 16 marches, 209 miles. By combining the first four marches of route 4 with route 5 and the last seven marches of route 6, we get—From Bhimbar, by Rājāorī and Pūnch, to Sirīnagar, 14 marches, 188 miles.

ROUTE 6.—*From Jhelam by Pūnch to Sirīnagar.*

(15 marches: 186 miles.)

Jhelam is on the Grand Trunk Road, 100 miles from Lāhor.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jhelam ..	0	827	
Chechiān	1		11
Mīrpūr ..	2	1286	11
Chaumuk	3		10
Biāri ..	4		7
Sansār ..	5		14
Kotlī ..	6		15
Saira ..	7		14
Pūnch ..	8	3300	16
Kahūta	9		9
Aliābād	10		8
Ūrī ..	11		17
Naushahra ..	12		14
Bāramūla	13		9
Patan ..	14		14
Sīrīnagar	15	5235	17
			186

This road is usually practicable for laden ponies. Between stages 10 and 11 the Hājī Pass is crossed, 8500 feet high. On this the snow in winter would render it difficult, if not impassable, for ponies. For the two marches from Bāramūla to Sirīnagar, boats are commonly taken.

ROUTE 7.—*From Marī to Sirīnagar.*

(12 marches: 135 miles.)

Marī, or Murree, the well-known hill-station in the British territory, is 40 miles from Rāwal Pindī, which is on the Grand Trunk Road. Camels, post carriages, and perhaps carts, can come as far as Marī.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Marī	0	7457	
Deval	1		12
Kohāla	2		9
Chatar-Kelas	3		9
Bārū	4		12
Tandalī	5		13
Garhī	6		13
Hattī	7		10
Chakotī	8		15
Ūrī	9		16
Naushahra	10		14
Bāramūla	11		9
Patan	12		14
Sīrīnagar	13	5235	17
			163

Between stages Nos. 2 and 3 the Jhelam River used to be crossed by boat; a bridge was being constructed, which may now be ready. The road is good for laden ponies, and is always, or nearly always, open. From 8 to 12 the marches are the same as in route 6.

Till a few years ago, the road from Kohāla to Chakotī took a different line, the following were the stages:

Kohāla *to*
Dannā
Maira
Chikār
Hattī
Chakotī

A day may thus be saved, but at the expense of some labour in going over some high hills.

ROUTE 8.—*From Abbotābād by Muzafarābād to Sirīnagar.*

(11 marches: 156½ miles.)

Abbotābād is a Cantonment and Civil Station among the hills in the Hazāra District, in the British territory.

From Rāwal Pindī, on the Grand Trunk Road, to Abbotābād, *viâ* Harīpūr, is 61 miles.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Abbotābād	0	4200	
Mansera	1		13½
Garhī	2		19
Muzafarābād	3		9
Hatiān	4		17
Kanda	5		11
Kathai	6		12
Shādra	7		12
Gingal	8		14
Bāramūla	9		18
Patan	10		14
Sirīnagar	11	5235	17
			156½

This is the easiest route from the Panjāb to Kashmir. Laden ponies can go over it without difficulty, and it is never stopped by snow. The last two stages are usually done by water.

ROUTE 9.—*From Sirīnagar to Gilgit and beyond.*

a. *Sirīnagar to Gilgit.*

(22 marches: 233½ miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
Sambal	1	5200	17
Bandīpūr	2	5200	18
Trāgbal	3	9160	9
Zotkusu	4		9
Kunzalwān	5		6
Gurez	6	7800	11
Gūrīkot (of Gurez)	7	9370	11
Mohu Dās	8		12
Camp	9		11
Pukarkot	10	9000	11
Chagām	11	8560	12
Gūrīkot (of Astor)	12	8058	13
Astor or Hasora	13	7853	7
Harcho	14	6700	11
Mushkin	15		8
Dūiyān	16	8720	8½
Rāmghāt	17		12
Bawanjī	18	4645	9
Jagrot	19	6260	12
Camp	20		7
Minā war	21		8
Gilgit	22	4800	11
			233½

These are the stages adopted by the Maharaja's troops. Travelling lightly one may make the distance in fewer days. Thus, No. 4 may be left out; from No. 7 to No. 10 these stages may be adopted—Razhāt 16, Pukarkot 18; from No. 13 to No. 16 these—Dashkin 15, Dūiyān 12½; and from No. 19 to No. 21 the two marches can be made into one. In this way there would be 18 stages instead of 22. I have myself done the distance in 11 days.

The first two stages are usually done by boat in one night and day.

The greater part of this road, especially after No. 7, is bad for laden ponies; still they commonly traverse it as far as 17. Between Jagrot and Mināwar there are some bits that would be dangerous, but a horse without a load may be led over them.

The road is closed by snow for near six months—from the middle of November to the middle of May.

Between Nos. 3 and 4, the Rājdiāngan Pass, 11,800 feet, and between Nos. 7 and 8, the Kamrī Pass, 13,160 feet, are crossed. Hatū Pīr is a spur that the road goes over between Nos. 16 and 17; it is about 10,000 feet high; the descent from it to Rāmghāt is steep and difficult.

b. *Sirīnagar to Gilgit; alternative route.*

(23 marches: 238½ miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
To Gurez (as in last route).	6		70
Bangla	7	8725	11
Māpanūn	8	10130	9
Burzil	9	10740	9
Camp	10	.. ..	12
Dās	11	10500	9
Gudhai	12	.. ..	12
Naugām	13	.. ..	8
Astor or Hasora	14	7853	12
Astor to Gilgit, as in last route, 9 marches.			86½
Gilgit	23	4800	238½

Between Nos. 9 and 10 the Dorikun Pass is crossed, 13,500 feet.

This road remains open a few weeks later, and re-opens in the spring a little earlier than the last; it is closed for about five months for horses. During the winter even, with a favourable opportunity, it is possible for men without loads to force the Pass.

c. *Gilgit to Yāsīn.*

(5 marches: 80 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Gilgit	0	4800	
Shakaiot	1	5560	18
Singal	2	5770	15
Gākūj	3	6920	8
Roshan	4		19½
Yāsīn	5	7765	19½
			80

This is from my own observation as far as Gākūj; beyond, from Mr. G. W. Hayward's account. The Maharaja's frontier is crossed a few miles beyond Gākūj.

From Yāsīn a road leads northwards into Wākhān, part of Badakhshān, which crosses the watershed at the third or fourth march from Yāsīn. Darkot is the last village this side the Pass.

Another road from Yāsīn leads first a little way down the Yāsīn River, and then westward over the Shundur Pass to Mastūj and Chitrāl.

ROUTE 10.—*From Sirīnagar by Deosai to Skārdū.*

(14 marches: 158 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
Sambal	1	5200	17
Bandīpūr	2	5200	18
Trāgbal	3	9160	9
Zotkusu	4		9
Kunzalwān	5		6
Gurez	6	7800	11
Bangla	7	8725	11
Māpanūn	8	10130	9
Burzil	9	10740	9
Sikhbach	10	13160	15
Lālpānī	11	12500	13
Usar Mar	12	13970	12
Karpītū	13	7636	16
Skārdū	14	7440 (town) ..	3
			158

Up to No. 9 the stages are the same as in Route 9 b, and up to No. 6 they are the same as in Route 9 a. Between Nos. 9 and 10 the Passes called Stakpilā (12,900 feet), and Sarsingar (13,860 feet), are traversed. Between Nos. 12 and 13 the Burjī Pass, 15,700 feet, is crossed.

Fourteen marches are here put down, but the distance may, without difficulty, be done in twelve, by passing over stage No. 4 or No. 5, and by gaining a march between 10 and 14.

This road is fit for laden ponies; it is closed by snow for about six months from October or November.

ROUTE 11.—*From Sirīnagar by Drās to Skārdū.*

(19 marches: 242 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
To Tashgām, as in Route 12	9		115
Karkitchu	10		14
Gangani	11		10
Olting Thang	12		12
Tarkūtī	13		14
Kartāksho	14		17
Toltī	15		12
Parkūta	16		14
Gol	17		13
Kepchung	18		17
Skārdū	19	7440 (town)	4
			242

Up to stage No. 9 the road is described under Route 12. The remainder of the road is in many parts bad; it is difficult to lead a horse along it. The closing of this road by snow depends on the Drās Pass, the condition of which is spoken of in the route next below.

ROUTE 12.—*From Sirīnagar to Leh.*

(19 marches: 259 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
Gāndarbal	1	5230	14
Kangan	2		12
Gūnd	3		14
Gagangīr	4		9
Sonāmarg	5	8650	10
Bāltal	6		10
Matāyan	7		16
Drās	8	9825	15
Tashgām	9	9390	15
Chānegund	10	8675	18
Kargil	11	8787 (fort)	6
Carried forward			139

Stage.	No.	Height above the sea in feet.	Miles from last stage.
	Brought forward		139
Shargol	12	10,290	20
Kharbū	13	11,890	18
Lāmayūrū	14	11,520	16
Nurla	15		18
Sāspūl	16		17
Nimū	17		13
Pitak	18		13
Leh	19	11,500	5
			259

The first stage from Sirīnagar may be reached by boat.

Between Nos. 6 and 7 the Drās or Zojī Pass, 11,300 feet, is passed. Between Nos. 12 and 13, the Nāmika Pass, 13,000 feet, and between Nos. 13 and 14 the Fotū Pass, 13,400 feet, are crossed. The Indus River is crossed by a wooden bridge between stages 14 and 15.

The road is fit for laden ponies during the summer, but for four or five months from December the snow on the Drās Pass renders it impassable by any but men, and makes it difficult for them.

From stage 14 to stage 19 there is an alternative route thus:

	No.	Miles.
Lāmayūrū	14	
Khalsī	15	12
Timisgām	16	10
Tārutse	17	17
Nimū	18	10
Leh	19	18

ROUTE 13.—*From Sirīnagar to Kishtwār.*

(7 marches: 102 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Sirīnagar	0	5235	
Avāntipūr	1	5350	17
Islāmābād	2	5600	16
Wangām	3		17
Wankringi	4		9
Singpūr	5		16
Mughal Maidān	6	4140	16
Kishtwār	7	5450	11
			102

The first two stages may be done by boat.

Between Nos. 4 and 5 the Marbal Pass, 11,570 feet, is crossed. Between 6 and 7 two rivers (the Wardwan River and the Chīnāb) have

to be crossed by rope bridges. Horses are made to swim across, but the passage is perilous for them. But for this danger the road would do for laden ponies. It is closed in the winter.

ROUTE 14.—*From Jummoo by Chanenī to Kishtwār.*

(11 marches: 139 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jummoo	0	1200	
Dansāl	1	1840	17
Ūdampūr	2	2500	14
Ballī	3		7
Chanenī	4		14
Batotī	5		12
Asan	6		16
Kullen	7		15
Bheli	8		10
Jangalwār	9	4100	14
Kananī	10	3685	10
Kishtwār	11	5450	10
			139

Parts of this road are bad for horses. It is open all the year round.

ROUTE 15.—*From Jummoo by Bhadarwāh to Kishtwār.*

(11 marches: 129½ miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Jummoo	0	1200	
Tūtānwālī Kūī	1		9
Saroīn Sar	2	1825	8
Chian	3		10
Rāmnagar	4	2700	15
Korta	5		13
Dūdar	6		14
Āsmās	7	9500	10
Bhadarwāh	8	5500	13
Jangalwār	9	4100	17½
Kananī	10	3685	10
Kishtwār	11	5450	10
			129½

Between Nos. 5 and 6 a ridge 8000 feet, and between Nos. 7 and 8 Seojī Pass, over 10.000 feet, are crossed.

The road is difficult for ponies. It is closed by snow for three months.

From No. 9 to No. 11 the route coincides with Route 14, same numbers.

ROUTE 16.—*From Mādhopūr by Bhadarwāh to Kishtwār.*

(10 marches: 129½ miles.)

Mādhopūr is on the left bank of the Rāvī, at the Bārī Dūāb Canal Head. It is 74 miles from Amritsar, with a good cart-road to that place.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Mādhopūr	0		
Thain	1		15
Basolī	2		12
Pud	3		13
Hartli	4		14
Lohāng	5		8
Camp	6		16
Bhadarwāh	7	5500	14
Kishtwār (see Route 15, Nos. 9 to 11)	10	5150	37½
			129½

The Rāvī River is crossed, by ford or by ferry, on the first march. Or by another route on left bank it is crossed at Basolī. Between 3 and 4 a ridge is crossed, and at 6 the Chatardhār Pass, 10,100 feet. The road is fit for laden ponies.

ROUTE 17.—*From Chamba by Bhadarwāh to Kishtwār.*

(8 marches: 92½ miles.)

Chamba is in the narrow valley of the Rāvī, on right bank; it is the residence of the Raja of the Hill principality of Chamba, who is under the British.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Chamba	0	3033	
Manjere	1		14
Digi or Kirah	2		10
Prungul	3		10
Camp	4		9
Bhadarwāh	5	5500	12
Kishtwār (see Route 15, Nos. 9 to 11)	8	5150	37½
			92½

ROUTE 18.—*From Kishtwār by Kargil to Leh.*

(23 marches: 306 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Kishtwār	0	5450	
Phalma	1		6
Ekali	2		14
Sanger	3		16
Hanja	4		15
Petgām	5		13
Camp	6		11
Inshin	7		9
Suknes	8		15
Dumhoi	9		9
Moskolu	10		12
Camp	11		12
Suru	12		10
Sānkho	13		18
Camp	14		13
Kargil	15	8787 (fort)	13
Leh (see Route 12, Nos. 12 to 19)	23	11500	120
			306

Between Nos. 10 and 11 we cross the Bhotkol Pass, 14,370 feet. At Kargil the route from Sirīnagar to Leh (Route 18) is joined.

From Kishtwār to Kargil the road is not fit for laden animals, but a horse can be led. The road is closed for about six months by the snow on the Bhotkol Pass.

ROUTE 19.—*From Kishtwār by Zānskār to Leh.*

(27 marches: 298 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Kishtwār	0	5450	
Bagnī	1	6150	13
Piyās	2	6320	11
Siri	3	8700	9½
Atholī	4	6360	14
Kundhel	5	7660	11
Machel	6	9700	11
Bujwās	7	11570	8½
Bugjān Hīwān	8	15500	7
Gaurā	9		13
Ating	10	12020	10
Carried forward			108

Stage.	No.	Height above the sea in feet.	Miles from last stage.
	Brought forward	.. ..	108
Sani	11	11,560	9
Padam (chief place of Zāns-kār)	12	11,370	9
Thondhe	13		9
Zanglā	14		12
Namtse	15	13,050	13
Pāngātse	16		10
Nirā	17	11,850	10
Yalchung	18	12,730	6
Phutāksa	19	13,900	16
Honupatta	20	12,400	12
Wanla	21	10,900	12
Lāmayūrū	22	11,520	6
Leh (see Route 12, Nos. 15 to 19)	27	11,500	66
			298

The following Passes are crossed:

Between stages	8 and 9, Umāsi Lā or Bardhār ..	17,370 feet.
"	14 " 15, Chelang Labho	14,850 "
"	16 " 17, Nirā Pass	16,000 "
"	18 " 19, Singhe Pass	16,600 "
"	19 " 20, a Pass	16,200 "
"	21 " 22, a Pass	12,500 "

The road is not fit for laden animals, and it would be difficult to lead a horse along it, but this has been done. It is open for four or five months of the year only.

Route 20.—*From Pālampūr in Kāngra by Kulu to Leh.*

(28 marches: 357 miles.)

Pālampūr is a newly-founded town, about 4000 feet above the sea, in the centre of the Kāngra tea-district. A fair is there held each autumn, which was established to attract Yārkandī merchants from Leh by this route. In some years it has been attended by them, but, partly from irregularity in the arrival of the Yārkand caravan at Leh, and partly that this road is not open late in the year, the fair has not answered this purpose so well as was expected by its founders; still it remains a local fair of some importance.

Pālampūr is about 96 miles from Jālandhar, the nearest railway station; a cart-road joins the two places.

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Pālampūr	0		
Baijnāth	1	.. ..	10
Dalu	2	.. ..	12
Jutingri	3	.. ..	14
Budwani	4	.. ..	15
Karam	5	.. ..	10
Sultānpūr (the chief place in Kulu)	6	.. ..	10
Nagar	7	.. ..	14
Jagat Sak	8	.. ..	8
Pulchun	9	.. ..	10
Rahla	10	.. ..	12
Kok Sar	11	.. .. 10,261	16
Sisu	12	.. ..	11
Gandla	13	.. ..	10
Kardong (Kailang)	14	.. ..	12
Kulang	15	.. ..	13
Darcha	16	.. ..	10
Patsio	17	.. ..	9
Zingzingbar	18	.. ..	9
Kanunor Kilang	19	.. ..	17
Sarchu	20	.. ..	11
Sumdo	21	.. ..	18
Sumkiel	22	.. ..	15
Rukchin	23	.. .. 15,000	18
Debring	24	.. ..	12
Gyā	25	.. .. 13,500	16
Māchalong	26	.. ..	23
Chushot	27	.. .. 10,500	12
Leh	28	.. .. 11,500	10
			357

The following Passes are crossed :

Between stages	4 and	5, the Bubu Pass	10,000 feet.
"	10 "	11, the Rotang Pass.	
"	18 "	19, the Bāra Lācha Pass ..	16,200 "
"	21 "	22, the Lāchalong Pass ..	16,600 "
"	24 "	25, the Toglung Pass ..	17,500 "

The Chīnāb River is crossed by bridge between 10 and 11, and the Indus between 27 and 28.

This road is fit for camels during the months it remains open; it is closed by snow for about seven months in the year.

It is not till between stage 10 and stage 11 that the road enters our maps. At stage 20 the road enters the Maharaja's territory.

ROUTE 21.—*From Simla by Wāngtū and Spitī to Leh.*

(34 marches: 430 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Simla	0		
Wāngtū	11	.. ..	121
Dankar in Spitī	18	12,774	81
Kaja	19	.. ..	16
Kiwar	20	13,400	12
Jughtha	21	16,000	12
Dutung	22	16,000	10
Umdung	23	.. ..	17
Narbū Sumdo	24	15,300	20
Kyangdum (S. end of Tso-moriri Lake)	25	14,900	11
Karzok	26	14,900	13
Pūga	27	.. ..	17
Camp	28	.. ..	13
Thugjī	29	14,900	12
Debring	30	.. ..	14
Gyā	31	13,500	16
Māchalong	32	.. ..	23
Chushot	33	.. ..	12
Leh	34	11,500	10
			430

This road enters our maps at stage 21. From there the Passes crossed are:

Between stages 21 and 22, the Pārang Pass .. .. 18,300 feet.
" 26 " 27, the Dabashi Pass .. about 16,500 "
" 27 " 28, the Folokonka Pass .. 16,300 "
" 30 " 32, the Toglung Pass .. .. 17,500 "

The first twenty-four marches are in British territory; afterwards the road lies in the Maharaja of Kashmir's territory. On account of the difficulty of the Pārang Pass it cannot be traversed by horses. For the same reason it is only open for a few months in the summer. The last four marches are the same as the last four of Route 20.

ROUTE 22.—*From Leh by Chorbat to Skārdū.*

(16 marches: $209\frac{1}{2}$ miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Nimū	1	.. ..	18
Tārutso	2	.. ..	10
Timisgām	3	.. ..	17
Carried forward			45

Stage.	No.	Height above the sea in feet.	Miles from last stage.
	Brought forward		45
Khalsī	4		10
Skirbichan	5		16
Goma Hauū	6		17
Camp	7		10
Piun	8		21
Dau	9		9
Sirmū	10		10
Khapalū	11		7½
Karkū	12		8
Kurū	13		16
Kiris	14		9
Narh	15		14
Skārdū	16	7440	17
			209½

The Chorbat Pass, 16,700 feet, is crossed between Nos. 7 and 8.

This is a summer route. In winter the valley of the Indus is followed, but the road is not so good.

ROUTE 23.—*From Leh by Kārākoram to Yārkand; summer route.*

(35 marches: 515 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Camp	1	15,000	12
Khardong	2	13,500	15
Khartsar	3	10,430	12
Tigar	4	10,030	13
Pānimik	5		14
Chonglung	6	11,500	13
Tutiyalak	7	13,000	13
Sar-i-Hauz-i-Khoja	8	15,500	12
Brangsa Saser	9	15,400	9
Bulak-i-Murghai	10	15,100	22
Burtse	11	16,000	12
Kizil Angūr	12	16,700	11
Daulat Beguldi	13	17,200	18
Brangsa	14	16,500	23
Wahāb-jilgāh	15	16,000	19
Malikshāh	16	15,300	15
Chibrā	17	16,480	12
Suket	18	13,000	18
Shāhdūla	19	11,500	12
Yārkand	35	4,000	240
			515

The Passes crossed are:

Between stages	1 and 2, the Khardong Pass	..	17,500 feet.
„	8 „ 9, the Saser Pass	.. ..	17,500 „
„	13 „ 14, the Kārākoram Pass	..	18,300 „
„	17 „ 18, the Suket Pass	.. ..	18,200 „
And afterwards the Sānjū Pass	.. ..		16,760 „
And the Chuchu Pass	.. ..		11,850 „

The Shayok River is crossed by boat between stages 3 and 4, or in certain seasons it may be forded a few miles above or below the ferry.

This road is traversed by laden ponies, but it is usual to have the aid of yāks to carry their loads over the Saser and the Sānjū Passes. The road keeps open for from four to five months in the year.

From stage 8 to stage 17 there is very little grass to be got, at some stages none at all; and at some fuel also is wanting. The latter part of the route is beyond the limit of our map.

ROUTE 24.—*From Leh by Kārākoram to Yārkand; winter route.**

(36 marches.)

Stage.	No.
Leh	0
Sabā	1
Digar	2
Agyām	3
Pakra	4
Chimchāk	5
Lāmakyent *or* Shāyok	6
Chungjangal	7
Dungyalāk	8
Mandarlik	9
Kutaklik	10
Sultān Chushkum	11
Duhn-i-Mūrghī	12
Bulak-ī-Mūrghī	13
Burtse	14
Kizil Angūr	15
Daulat Beguldī	16
Brangsa	17
Wahāb-jilgāh	18
Malikshāh	19
Kafalong	20
Jindbalghūn	21
Bukharuldī	22
Kirgiz-jangal	23
Yārkand	36

* This is taken from the Panjāb Trade Report, 1862. I have not put in the distances there given, as they are not to be relied on. The information was from Muhammad Amīn, who was familiar with the road and has doubtless given the stages correctly.

From stage 13 to 19 this route coincides with stages 10 to 16 of Route 23.

The Passes crossed are:

Between stage 1 and stage 2, the Digar Pass.
" 16 " 17, the Kārākoram Pass, 18,300 feet.
Afterwards the Yangī Pass, and the Tup Diwān.

This road is fit for laden ponies; it is open from November till February. There are many places where grass and fuel are scant, and some where they are absolutely wanting. The latter part of the route is beyond the limit of our map.

ROUTE 25.—*From Leh by Chāngchenmo to Yārkand; western route.*

(40 marches: 610 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Tikse	1		13
Chimre	2		16
Zingrāl	3		11
Tsultak	4		13
Durgo	5		16
Tānktse	6	12,800	7
Camp	7		11
Lukung	8	14,086	11
Charkang	9	16,700	14
Gunle	10	16,140	13
Tsolu (near Pamzāl)	11	14,760	12
Gogrā	12	15,500	14
Camp	13	16,500	21
Camp	14	17,000	20
Sumdo	15	17,000	25
Shinglung	16	16,700	11
Kizil Jilgāh	17	16,500	14
Khushk Maidān	18	15,600	18
Shor Jilgāh	19	15,900	14
Kāratāgh Lake	20	16,900	17
Malikshāh	21	15,300	25
Shāhdūla (see Route 23, Nos. 17 to 19)	24	11,500	54
Yārkand	40	4,000	240
			610

The Passes crossed are:

Between stages 3 and 4, the Chāng Pass	.. about	18,000 feet.
" 9 " 10, the Māsimik Pass ..	..	18,200 "
" 13 " 14, a Pass	..	18,000 "
" 16 " 17, the Kizil Pass ..	..	17,800 "
" 19 " 20, the Kāratāgh Pass.		
Afterwards, the Suket Pass	..	18,200 "
The Sānjū Pass	..	16,760 "
And the Chuchu Pass	..	11,850 "

This is the road indicated by Dr. Cayley and traversed by Mr. Forsyth's party on their return journey, in 1870. It is thought to be the easiest of the roads to Yārkand; it can be traversed by camels of the two-humped species; fuel and grass are wanting at two or three stages only. It would be closed in the winter.

ROUTE 26.—*From Leh by Chāngchenmo to Yārkand; Hayward's route.*
(36 marches: 546½ miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Gogra	12	15,500	151
Chonglung	13		17
Nischu	14		15
Lingzhīthang	15		21
Burtse	16		10½
Kārasū	17		10
Kīzil Jilgāh	18		14½
Khushk Maidān	19		16
Shor Jilgāh	20		10
Oglok	21		21
Wahābjilgāh	22		10
Aktāgh	23		15½
Yārkand	36		235
			546½

This road was found out and recommended by Mr. Hayward.

From Aktāgh to Yārkand either the summer or the winter route (Route 23 or Route 24) may be followed.

ROUTE 27.—*From Leh by Chāngchenmo to Yārkand; eastern route.*
(43 marches: 628 miles.)

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Gogra	12	15,500	151
Chonglung	13	16,700	17
Nīschu	14	17,700	15
Lingzhīthang	15	17,300	21
Carried forward			204

Stage.	No.	Height above the sea in feet.	Miles from last stage.
	Brought forward	..	204
Tsothang	16	17,100	18
Lokzhung	17	17,200	16
Thaldat	18	16,300	15
Yangpā	19	16,200	30
E. Kārākāsh Valley	20	15,000	24
Shāhdūla	27	11,500	81
Yārkand	43	4,000	240
			628

This is the road over the great plateaus; it is the one that was taken by Adolphe Schlagintweit and imperfectly described by Muhammad Amīn his guide (Panjāb Trade Report); afterwards Mr. Johnson traversed it on his way to Khutan and gave a detailed Itinerary (Journal R. Geographical Society, 1867). The details of distances and heights here given, for as far as the E. Kārākāsh Valley, are from my own observation.

A diversion from or loop in this route was made by Dr. Cayley; this also I have traversed. The distances and heights are as follows:

Stage.	No.	Height above the sea in feet.	Miles from last stage.
Thaldat	18	16,300	
Patsālung	19	16,400	20
Camp	20	15,900	21
E. Kārākāsh Valley	21	15,000	12

ROUTE 28.—*From Leh to Gar.*

(20 marches: 254 miles.)

Stage	No.	Height above the sea in feet.	Miles from last stage.
Leh	0	11,500	
Chushot	1		10
Māchalong	2		12
Gyā	3	13,500	23
Debring	4		16
Thugjī	5	14,900	14
Camp	6		12
Pūgā	7		13
Maiya	8		13
Nimū	9		12
Camp	10		17
Camp	11		17
Dora	12	13,800	10
Tashīgong	17		55
Gar	20		30
			254

This is Lower Gar, the winter station.

ROUTE 29.—*From Pālampūr by Chāngchenmo to Yārkand, avoiding Leh.*

(65 marches: 923 miles.)

Stage.	No.	Miles from last stage.
Pālampūr	0	
Māchalong (see Route 20)	26	 335
Chimre	27	 7
Shāhdūla (see Route 25)	49	 341
Yārkand	65	 240
		923

Either this route or the same with a deviation to the eastward was intended as the trade-route provided for in the Commercial Treaty between the Governor-General and the Maharaja, which is given in Appendix V.

ROUTE 30.—*From Pālampūr by Kārākoram to Yārkand, avoiding Leh.*

(62 marches: 870 miles.)

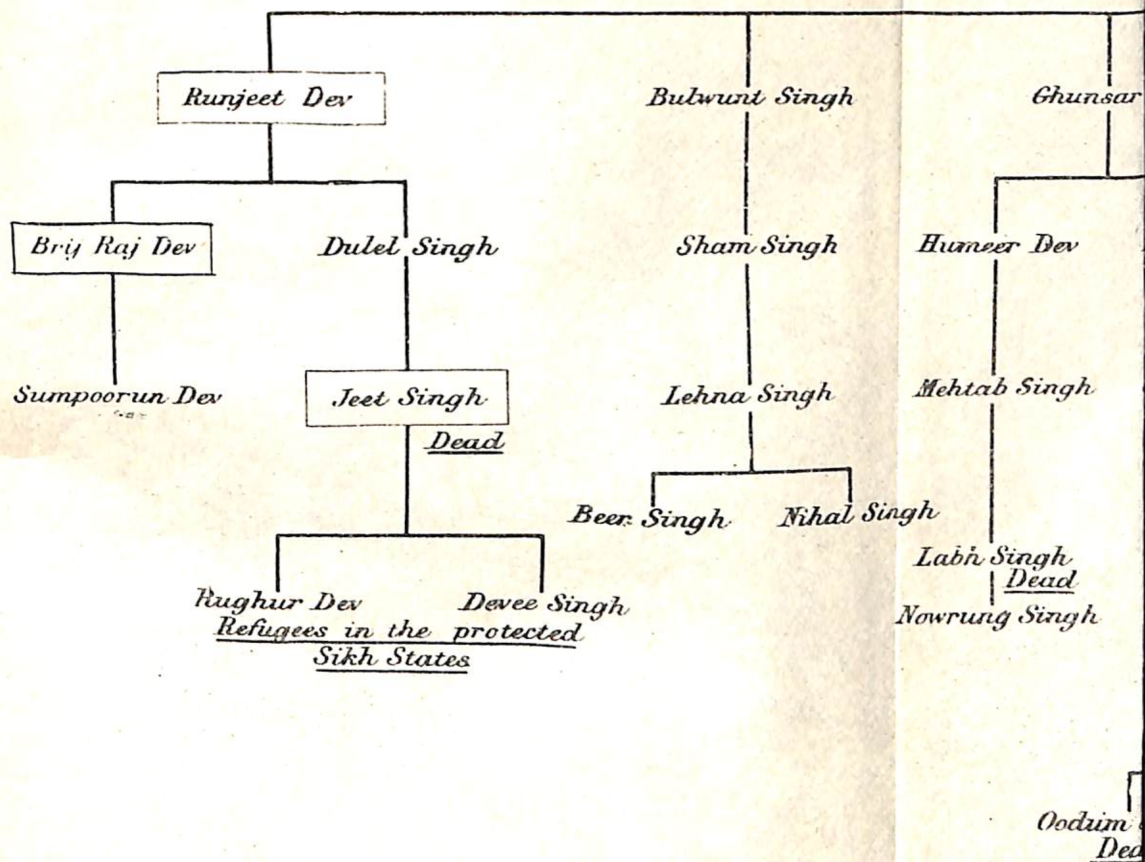
Stage.	No.	Miles from last stage.
Pālampūr	0	
Māchalong (see Route 20)	26	 335
Chimre	27	 7
Tagnak	28	 10
Tainyār	29	 20
Tsātī	30	 20
Tigar	31	 15
Shāhdūla (see Route 23) ..	46	 223
Yārkand	62	 240
		870

This might be used as an alternative to the last if it were advisable to go by Kārākoram rather than by Chāngchenmo. Between Nos. 28 and 29 the Warīs Lā is crossed, an easy Pass, 17,200 feet high, which is now fit for laden ponies and might easily be made fit for camels: it is closed by snow for three months. The distance between Tagnak and Tsātī (40 miles) can also conveniently be divided into three marches of 13 or 14 miles each.

APPE

GENEALOGY OF TH

Extracted from Cunnin

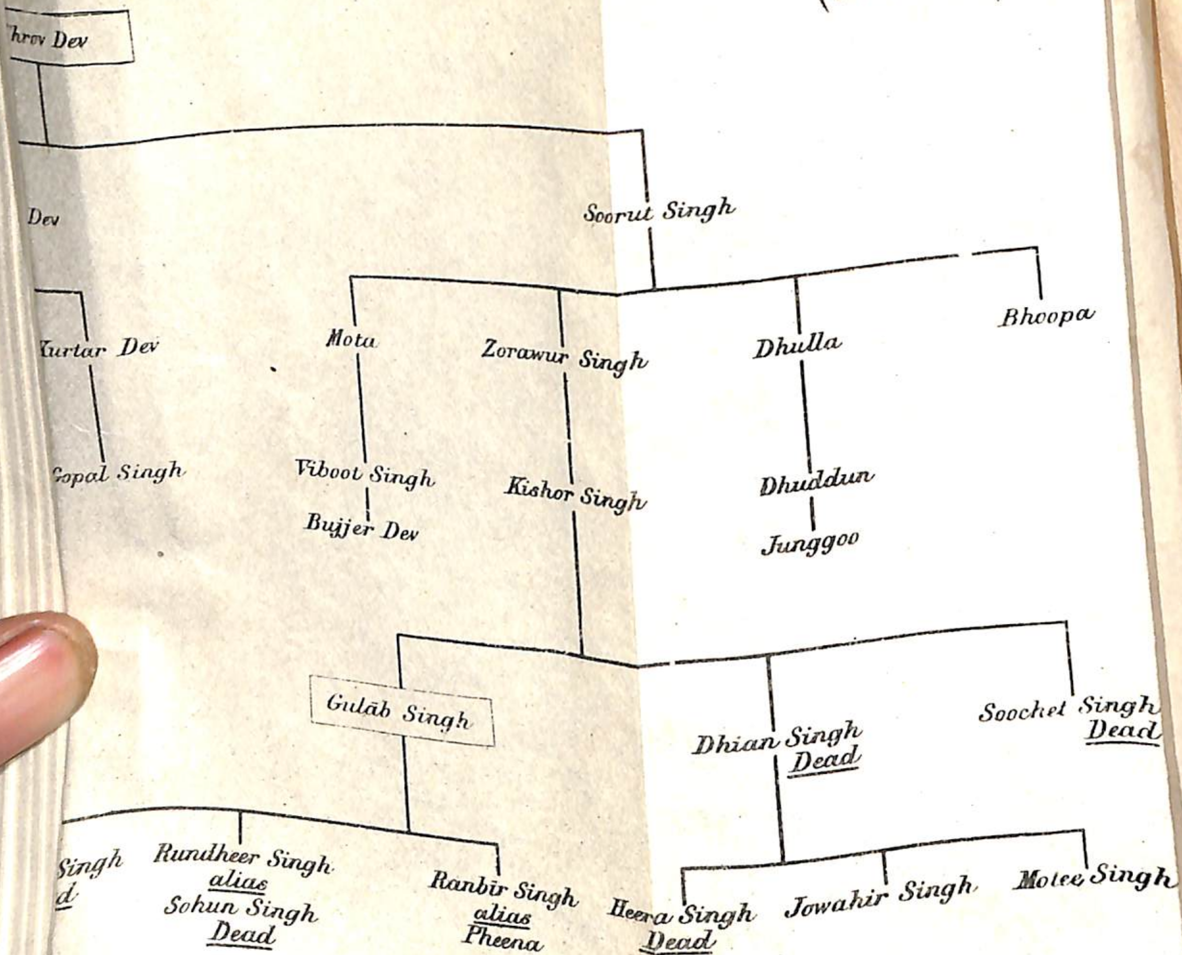


The genealogy is thus brought down by Cunningham to the tin taken place in the New branch (the other being quite out of sig only surviving legitimate son Ranbīr Singh, the present Maha Singh, and Amar Singh; of Dhian Singh's sons, the youngest,

NDIX VI

E RAJAS OF JUMMOO

gham's History of the Sikhs.



e when he wrote, the year 1848, since then the following changes have ht); Gūlab Singh died 1857 and was succeeded by his youngest and raja. Maharaja Ranbīr Singh has three sons, Partāb Singh, Rām Raja Motī Singh of Pūnchs only survives.

APPENDIX V.

TREATIES.

[*Nos.* 1 *and* 2 *are extracted from Aitchison's Collection of Treaties*, 1863, *Vol. II.*, *Calcutta. No.* 3 *is from the Punjab Government Gazette, of* 26*th May*, 1870.]

1. EXTRACTS from the TREATY between the BRITISH GOVERNMENT and the STATE OF LĀHOR, which was at the time nominally under MAHARAJA DHŪLEEP SINGH, really governed by the DARBĀR or COUNCIL OF MINISTERS.

* * * * * * * *

Done at Lahore, 9th March, 1846, *and ratified on the same day.*

Article III.—The Maharaja cedes to the Honorable Company, in perpetual sovereignty, all his forts, territories, and rights in the Doab or country, hill and plain, situated between the Rivers Beeas and Sutlej.

Article IV.—The British Government having demanded from the Lahore State, as indemnification for the expenses of the War, in addition to the cession of territory described in Art. III., payment of one and half crore of Rupees, and the Lahore Government, being unable to pay the whole of this sum at this time, or to give security satisfactory to the British Government for its eventual payment, the Maharaja cedes to the Hon'ble Company, in perpetual sovereignty, as equivalent for one crore of Rupees, all his forts, territories, rights and interests in the hill countries, which are situated between the Rivers Beeas and Indus, including the Provinces of Cashmere and Hazarah.

Article XII.—In consideration of the services rendered by Rajah Golab Singh, of Jummoo, to the Lahore State, towards procuring the restoration of the relations of amity between the Lahore and British Governments, the Maharaja hereby agrees to recognize the Independent Sovereignty of Rajah Golab Singh in such territories and districts in the hills as may be made over to the said Rajah Golab Singh, by separate agreement between himself and the British Government, with the dependencies thereof, which may have been in the Maharaja's possession since the time of the

late Maharaja Khurruck Singh, and the British Government, in consideration of the good conduct of Rajah Golab Singh, also agrees to recognize his independence in such territories, and to admit him to the privileges of a separate Treaty with the British Government.

Article XIII.—In the event of any dispute or difference arising between the Lahore State and Rajah Golab Singh, the same shall be referred to the arbitration of the British Government, and by its decision the Maharaja engages to abide.

(Signed) H. HARDINGE.
MAHARAJAH DHULEEP SINGH.
And by SEVEN MINISTERS.

2. TREATY between the BRITISH GOVERNMENT and MAHARAJA GOLAB SINGH OF JUMMOO.

Done at Umritsur, 16*th March*, 1846.

Article I.—The British Government transfers and makes over for ever, in independent possession, to Maharajah Golab Singh and the heirs male of his body, all the hilly or mountainous country, situated to the eastward of the River Indus and westward of the River Ravee, including Chumba and excluding Lahul, being part of the territories ceded to the British Government by the Lahore State, according to the provisions of Article IV. of the Treaty of Lahore, dated 9th March, 1846.

Article II.—The eastern boundary of the tract transferred by the foregoing Article to Maharaja Golab Singh shall be laid down by Commissioners appointed by the British Government and Maharajah Golab Singh respectively for that purpose, and shall be defined in a separate engagement after survey.

Article III.—In consideration or the transfer made to him and his heirs by the provision of the foregoing Articles, Maharajah Golab Singh will pay to the British Government the sum of Rupees (Nanukshahee), fifty lakhs to be paid on ratification of this Treaty, and twenty-five lakhs on or before the first October of the current year, A.D. 1846.

Article IV.—The limits of the territories of Maharaja Golab Singh shall not be at any time changed without the concurrence of the British Government.

Article V.—Maharajah Golab Singh will refer to the arbitration of the British Government any disputes or questions that may arise between

himself and the Government of Lahore or any other neighbouring State, and will abide by the decision of the British Government.

Article VI.—Maharajah Golab Singh engages for himself and heirs to join, with the whole of his Military Force, the British troops, when employed within the hills, or in the territories adjoining his possessions.

Article VII.—Maharajah Golab Singh engages never to take or retain in his service, any British subject, nor the subject of any European or American State, without the consent of the British Government.

Article VIII.—Maharaja Golab Singh engages to respect, in regard to the territory transferred to him, the provisions of Articles V., VI., and VII. of the separate Engagement between the British Government and the Lahore Durbar, dated March 11th, 1846.*

Article IX.—The British Government will give its aid to Maharajah Golab Singh in protecting his territories from external enemies.

Article X.—Maharajah Golab Singh acknowledges the supremacy of the British Government, and will in token of such supremacy present annually to the British Government one horse, twelve perfect shawl goats of approved breed (six male and six female), and three pair of Cashmere shawls.

(Signed) H. Hardinge.

(Signed) F. Currie.
H. M. Lawrence.

By order of the Right Honorable the Governor-General of India.

(Signed) F. Currie,
Secretary to the Government of India with the Governor-General.

3. Commercial Treaty between the British Government and the Maharaja of Kashmir, made in 1870; with the Rules for the guidance of the Joint Commissioners appointed under it.

Treaty between the British Government and His Highness Runbeer Sing, G.C.S.I., Maharaja of Jummoo and Cashmere, his heirs and successors, executed on the one part by Thomas Douglas Forsyth, C.B., in virtue of the full powers vested in him by His Excellency the Right Hon'ble Richard Southwell Bourke, Earl of Mayo, Viscount Mayo of

* Referring to Jāgīrdārs, arrears of revenue, and the property in the forts that are to be transferred.

Moneycrower, Baron Naas of Naas, K.P., G.M.S.I., P.C., &c., &c., &c., Viceroy and Governor-General of India, and on the other part by His Highness Maharaja Runbeer Sing, aforesaid, in person.

WHEREAS, in the interest of the high contracting parties and their respective subjects, it is deemed desirable to afford greater facilities than at present exist for the development and security of trade with Central Asia, the following Articles have, with this object, been agreed upon:

Article I.—With the consent of the Maharaja, officers of the British Government will be appointed to survey the trade-routes through the Maharaja's territories from the British frontier of Lahoul to the territories of the Ruler of Yarkand, including the route *viâ* the Changchenmo Valley. The Maharaja will depute an officer of his Government to accompany the surveyors, and will render them all the assistance in his power. A map of the routes surveyed will be made, an attested copy of which will be given to the Maharaja.

Article II.—Whichever route towards the Changchenmo Valley shall, after examination and survey as above, be declared by the British Government to be the best suited for the development of trade with Central Asia, shall be declared by the Maharaja to be a free highway in perpetuity and at all times for all travellers and traders.

Article III.—For the supervision and maintenance of the road in its entire length through the Maharaja's territories, the regulation of traffic on the free highway described in Article II., the enforcement of regulations that may hereafter be agreed upon, and the settlement of disputes between carriers, traders, travellers or others using that road, in which either of the parties or both of them are subjects of the British Government or of any foreign State, two Commissioners shall be annually appointed, one by the British Government and one by the Maharaja. In the discharge of their duties, and as regards the period of their residence, the Commissioners shall be guided by such rules as are now separately framed and may from time to time hereafter be laid down by the joint authority of the British Government and the Maharaja.

Article IV.—The jurisdiction of the Commissioners shall be defined by a line on each side of the road at a maximum width of two statute *kos*, except where it may be deemed by the Commissioners necessary to include a wider extent for grazing grounds. Within this maximum width, the surveyors appointed under Article I. shall demarcate and map the limits of jurisdiction which may be decided by the Commissioners as most suitable, including grazing grounds; and the jurisdiction of the Commissioners shall not extend beyond the limits so demarcated

The land included within these limits shall remain in the Maharaja's independent possession; and, subject to the stipulations contained in this treaty, the Maharaja shall continue to possess the same rights of full sovereignty therein as in any other part of his territories, which rights shall not be interfered with in any way by the Joint Commissioners.

Article V.—The Maharaja agrees to give all possible assistance in enforcing the decisions of the Commissioners, and in preventing the breach or evasion of the Regulations established under Article III.

Article VI.—The Maharaja agrees that any person, whether a subject of the British Government, or of the Maharaja, or of the Ruler of Yarkand, or of any foreign State, may settle at any place within the jurisdiction of the Joint Commissioners, and may provide, keep, and maintain, and let for hire at different stages, the means of carriage and transport for the purposes of trade.

Article VII.—The two Commissioners shall be empowered to establish supply depôts, and to authorize other persons to establish supply depôts at such places on the road as may appear to them suitable; to fix the rates at which provisions shall be sold to traders, carriers, settlers, and others, and to fix the rent to be charged for the use of any rest-houses or serais that may be established on the road. The officers of the British Government in Kullu, &c., and the officers of the Maharaja in Ladakh, shall be instructed to use their best endeavours to supply provisions on the indent of the Commissioners at market rates.

Article VIII.—The Maharaja agrees to levy no transit duty whatever on the aforesaid highway; and the Maharaja further agrees to abolish all transit duties levied within his territories on goods transmitted in bond through His Highness' territories from Central Asia to India, and *vice versâ*, on which bulk may not be broken within the territories of His Highness. On goods imported into, or exported from, His Highness' territory, whether by the aforesaid free highway or by any other route, the Maharaja may levy such import or export duties as he may think fit.

Article IX.—The British Government agree to levy no duty on goods transmitted in bond through British India to Central Asia, or to the territories of His Highness the Maharaja. The British Government further agrees to abolish the export duties now levied on shawls and other textile fabrics manufactured in the territories of the Maharaja, and exported to countries beyond the limits of British India.

Article X.—This Treaty, consisting of ten Articles, has this day been concluded by Thomas Douglas Forsyth, C.B., in virtue of the full powers vested in him by His Excellency the Right Hon'ble Richard Southwell Bourke, Earl of Mayo, Viscount Mayo of Moneycrower, Baron Naas of Naas, K.P., G.M.S.I., P.C., &c., &c., Viceroy and

Governor-General of India, on the part of the British Government, and by Maharaja Runbeer Sing, aforesaid; and it is agreed that a copy of this Treaty, duly ratified by His Excellency the Viceroy and Governor-General of India, shall be delivered to the Maharaja on or before the 7th September, 1870.

Signed, sealed, and exchanged on the second day of May in the year 1870 A.D., corresponding with the first day of Bysak Soodee Sumbut 1927.

(Signed) MAHARAJA RUNBEER SING.
(Signed) T. D. FORSYTH.
MAYO. (Seal).

This Treaty was ratified by His Excellency the Viceroy and Governor-General of India at Sealkote on the second day of May in the year 1870.

(Signed) C. U. AITCHISON,
Officiating Secretary to the Government of India, Foreign Department.

The following Rules for the guidance of the Joint Commissioners appointed under Article III. of the above Treaty are published for general information:

Rules for the guidance of the Joint Commissioners appointed for the new route to Eastern Turkistan.

I. As it is impossible, owing to the character of the climate, to retain the Commissioners throughout the year, the period during which they shall exercise their authority shall be taken to commence on 15th May and to end on 1st December, or till such further time as the passage of traders render their residence on the road necessary.

II. During the absence of either Commissioner, cases may be heard and decided by the other Commissioner, subject to appeal to the Joint Commissioners.

III. In the months when the Joint Commissioners are absent—i. e. between 1st December and 15th May—or the dates that may hereafter be determined, all cases which may arise shall be decided by the Wuzeer of Ladakh, subject to appeal to the Joint Commissioners.

IV. The Joint Commissioners shall not interfere in cases other than those which affect the development, freedom, and safety of the trade, and the objects for which the Treaty is concluded, and in which one of the parties or both are either British subjects, or subjects of a foreign State.

V. In civil disputes the Commissioners shall have power to dispose of all cases, whatever be the value of the property in litigation.

VI. When the Commissioners agree their decision shall be final in all cases. When they are unable to agree the parties shall have the right of nominating a single arbitrator, and shall bind themselves in writing to abide by his award. Should the parties not be able to agree upon a single arbitrator, each party shall name one, and the two Commissioners shall name a third, and the decision of the majority of the arbitrators shall be final.

VII. In criminal cases of the kind referred to in Clause IV., the powers of the Commissioners shall be limited to offences such as in British territory would be tried by a subordinate magistrate of the first Class, and as far as possible, the procedure of the Criminal Procedure Code shall be followed. Cases of a more heinous kind, and of offences against the special laws regarding religion in Cashmere, should be made over to the Maharaja for trial if the accused be not a European British subject; in the latter case, he should be forwarded to the nearest British Court of competent jurisdiction for trial.

VIII. All fines levied in criminal cases and all stamp receipts levied according to the rates in force for civil suits in the Maharaja's dominions shall be credited to the Cashmere Treasury. Persons sentenced to imprisonment shall, if British subjects, be sent to the nearest British jail. If not British subjects, the offenders shall be made over for imprisonment in the Maharaja's jails.

IX. If any places come within the line of road from which the towns of Leh, &c., are supplied with fuel, or wood for building purposes, the Joint Commissioners shall so arrange with the Wuzeer of Ladakh that those supplies are not interfered with.

X. Whatever transactions take place within the limits of the road shall be considered to refer to goods in bond. If a trader opens his load and disposes of a portion, he shall not be subject to any duty, so long as the goods are not taken for consumption into the Maharaja's territory across the line of road. And goods left for any length of time in the line of road subject to the jurisdiction of the Commissioners shall be free

XI. Where a village lies within the jurisdiction of the Joint Commissioners, there, as regards the collection of revenue, or in any case where there is necessity for the interference of the usual Revenue authorities, in matters having no connection with trade, the Joint Commissioners have no power whatever to interfere; but, to prevent misunderstanding, it is advisable that the Revenue officials should first communicate with the Joint Commissioners before proceeding to take action against any person within their jurisdiction. The Joint Commissioners can then exercise their discretion to deliver up the person sought

or to make a summary inquiry to ascertain whether their interference is necessary or not.

XII. The Maharaja agrees to give Rs. 5000 this year for the construction of the road and bridges, and in future years His Highness agrees to give Rs. 2000 per annum for the maintenance of the road and bridges.

Similarly, for the repairs of serais, a sum of Rs. 100 per annum for each serai will be given.

Should further expenditure be necessary, the Joint Commissioners will submit a special report to the Maharaja, and ask for a specific grant. This money will be expended by the Joint Commissioners, who will employ free labour at market rates for this purpose. The officers in Ladakh and in British territory shall be instructed to use their best endeavours to supply labourers on the indent of the Commissioners at market rates. No tolls shall be levied on the bridges on this line of road.

XIII. As a temporary arrangement, and until the line of road has been demarcated, or till the end of this year, the Joint Commissioners shall exercise the powers described in these Rules over the several roads taken by the traders through Ladakh from Lahoul and Spiti.

(Signed) MAHARAJA RUNBEER SING.
(Signed) T. D. FORSYTH.

APPENDIX VII.

STATISTICAL TABLES extracted and translated from the ADMINISTRATION REPORT of JUMMOO and KASHMIR for the year 1873, which was prepared, in accordance with the Command of H.H. The Maharaja, by Dīwān Kirpā Rām.

TABLE I.

CENSUS OF THE JUMMOO AND KASHMIR TERRITORIES FOR 1873 A.D.

	HINDŪS.			MUHAMMADANS.			SUNDEY CASTES.			BUDDHISTS.			TOTAL.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Jummoo Districts	223,122	214,152	437,274	174,271	163,273	337,544	43,742	42,515	86,257	..	..	..	441,135	419,940	861,075
Kashmir	38,719	22,413	61,132	219,454	208,034	427,488	1,754	1,472	3,226	..	..	..	259,927	231,919	491,846
Ladākh, Skārdū, and Gilgit ..	2,566	3	2,569	41,947	39,715	81,662	..	..	..	10,784	9,470	20,254	55,297	49,188	104,485
Punch	3,011	2,713	5,724	36,024	35,818	71,842	..	..	..	..	..	..	39,035	38,531	77,566
Total	267,418	239,281	506,699	471,696	446,840	918,536	45,496	43,987	89,483	10,784	9,470	20,254	795,394	739,578	1,534,972

NOTE.—Ladies of rank, parda-nishīn (i. e. *those who live in close retirement*), have not been counted.

TABLE II.

DETAIL OF THE CENSUS OF THE JUMMOO DISTRICTS FOR 1873.

	Hindūs.	Muhammadans.	Other Castes.	Total.
Jummoo City	28,391	11,804	1,622	41,817
Jummoo District	77,083	62,069	25,858	165,010
Jasrota "	58,279	10,243	4,832	73,354
Mināwar "	82,298	102,890	7,816	193,004
Naushahra "	19,754	89,184	2,950	111,888
Riāsī "	54,358	23,455	20,222	98,035
Udampūr "	53,739	30,054	14,397	98,190
Rāmnagar "	63,372	7,845	8,560	79,777
Total	437,274	337,544	86,257	861,075

TABLE III.

DETAIL OF THE CENSUS OF KASHMIR FOR 1873.

Sirīnagar City	132,681
Town of Pāmpūr	2,092
" Bij Bihāra	2,26[illegible]
" Islāmābād	5,656
" Shapeyan	2,353
" Sopūr	3,973
" Bāramūla	4,444
District of Sirīnagar	46,731
" Islāmābād	48,205
" Shapeyan	52,169
" Patan	50,084
" Kāmrāj	70,859
" Muzafarābād	70,337
Total	491,846

Of the 132,681 inhabitants of Sirīnagar, 39,737 are Hindūs. 92,766 are Muhammadans, and 178 are put down as belonging to other castes.

TABLE IV.

DETAIL OF THE CENSUS OF THE OUTLYING GOVERNORSHIPS FOR 1873.

	HINDŪS.			MUHAMMADANS.			BUDDHISTS.			TOTAL.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Ladākh	107	..	107	215	45	260	10,784	9,470	20,254	11,106	9,515	20,621
Zānskār, Drās, Kargil, Suru, and Skārdū ..	652	..	652	29,229	28,149	57,378	..	..	..	29,881	28,149	58,030
Gilgit	1,807	3	1,810	12,503	11,521	24,024	..	..	..	14,310	11,524	25,834
Total	2,566	3	2,569	41,947	39,715	81,662	10,784	9,470	20,254	55,297	49,188	104,485

TABLE V.

VALUE OF THE IMPORTS AND EXPORTS OF THE DIFFERENT PARTS OF THE TERRITORIES IN THE YEAR 1873.

The value is given in pounds sterling, rupees in the original having been converted at the rate of 10 per pound sterling.

	SUBJECT TO DUTY			FREE OF DUTY.			TOTAL.			COMPARED WITH LAST YEAR.	
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	Imports.	Exports.	Total.	Increase.	Decrease.
Jummoo Districts	282,497	154,685	437,182	75,370	..	75,370	357,867	154,685	512,552	9,952	..
Kashmir	85,762	172,125	257,886	124,471	..	124,471	210,233	172,125	382,358	..	94,588
Punch ..	33,700	13,660	47,360	..	..	..	33,700	13,660	47,360	Not entered last year.	
Ladākh.	..	..	..	95,188	82,497	177,686	95,188	82,497	177,686	78,757	..
Total..	401,958	340,470	742,129	295,030	82,497	377,527	696,989	422,967	1,119,957	88,710	94,588

Grand total of value of Imports and Exports for this year, 1873 .. .. £1,119,957
Decrease as compared with last year 5,877

The decrease under the head of Kashmir is due to a falling off in the shawl trade to the extent of 40,000*l.* in shawls exported, and about an equal deficiency in cash, which would have been imported to pay for them.

N.B.—Goods that have once been entered in the imports are not, on going to another division of the territories, again entered either as exports or imports. An exception, however, occurs for Ladākh, where the same article is counted both in the exports and imports of that country.

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[*For an Account of the special diacritical Marks here used, see Preface and page* 503].

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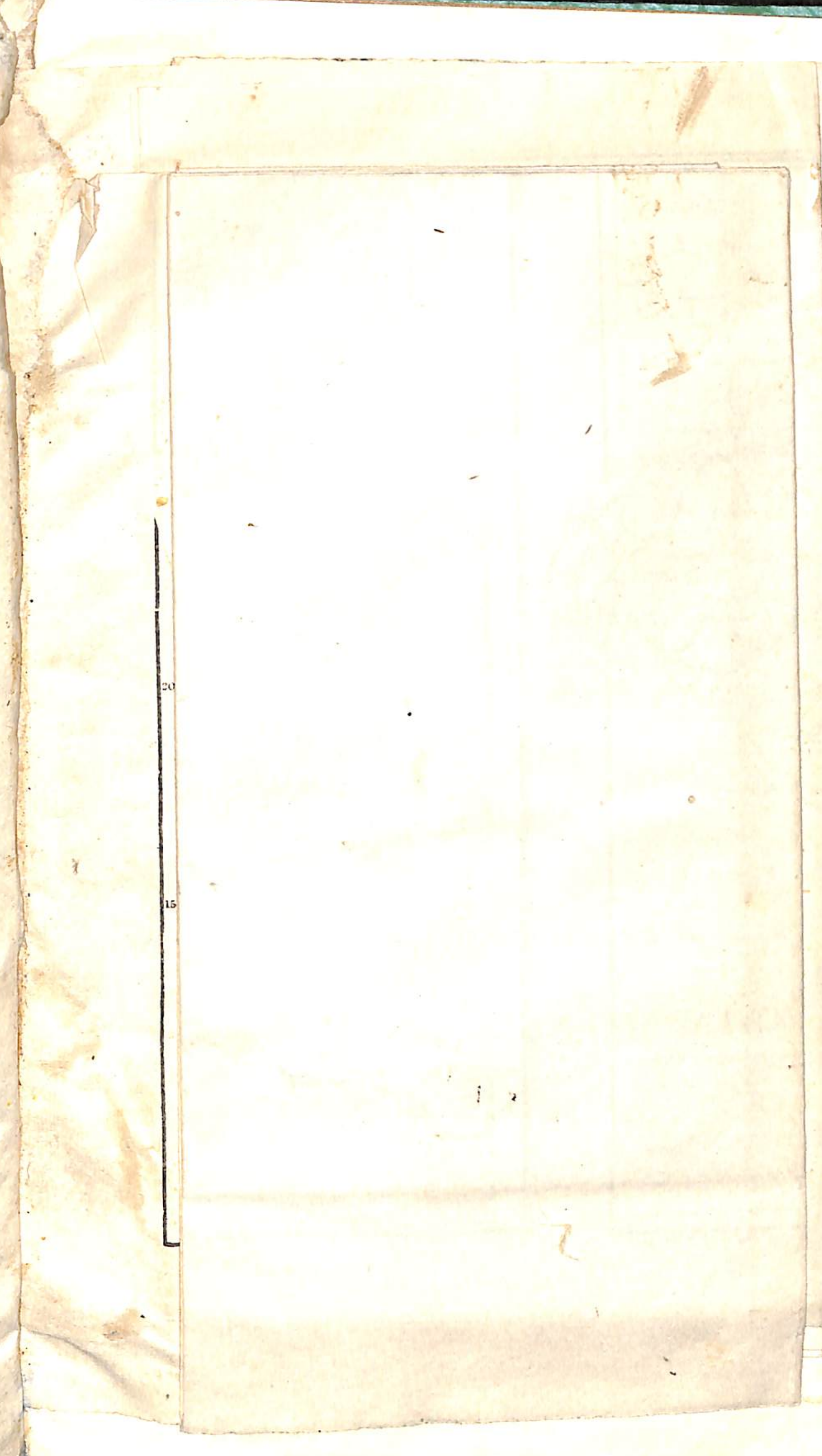
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